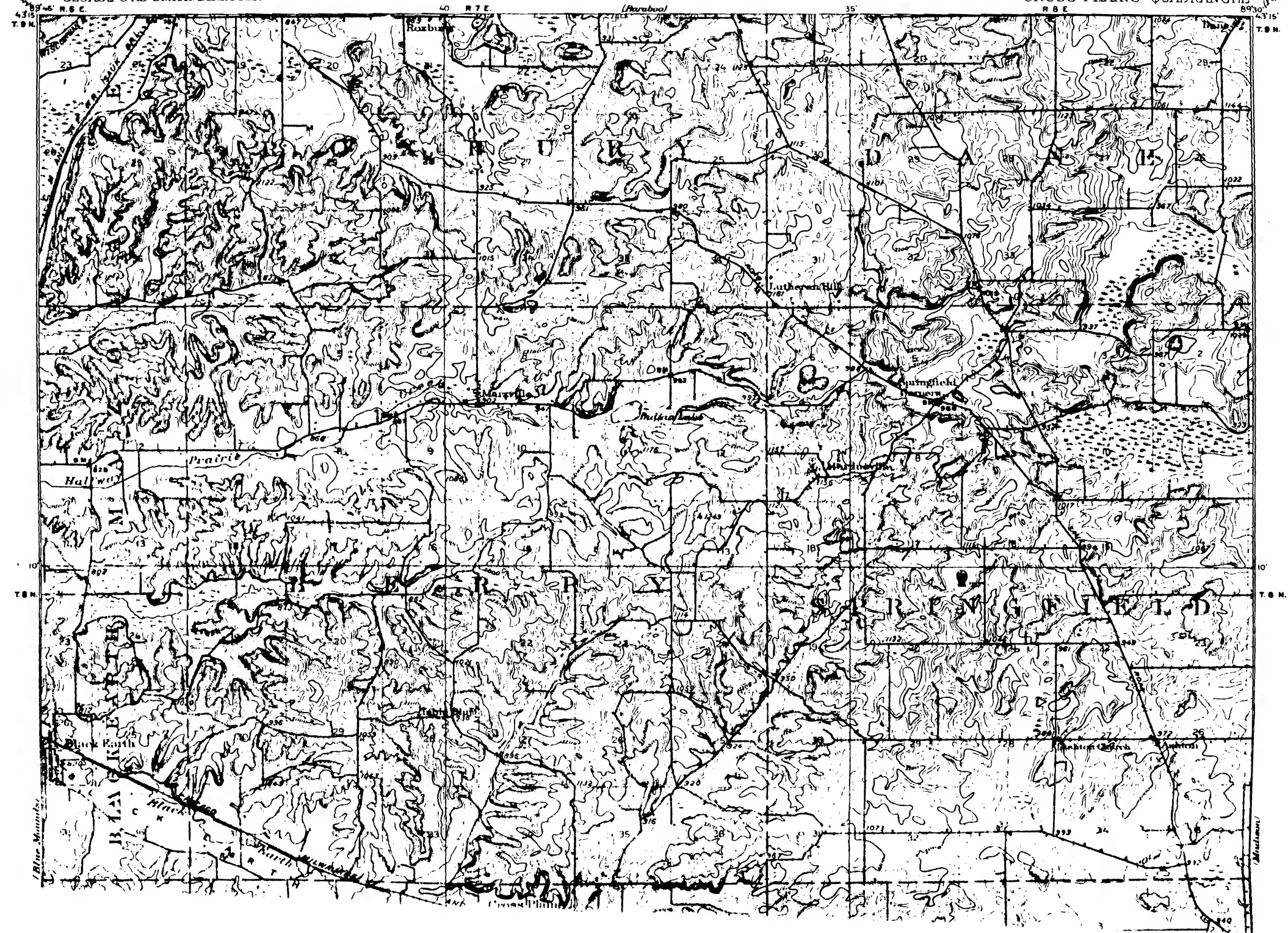
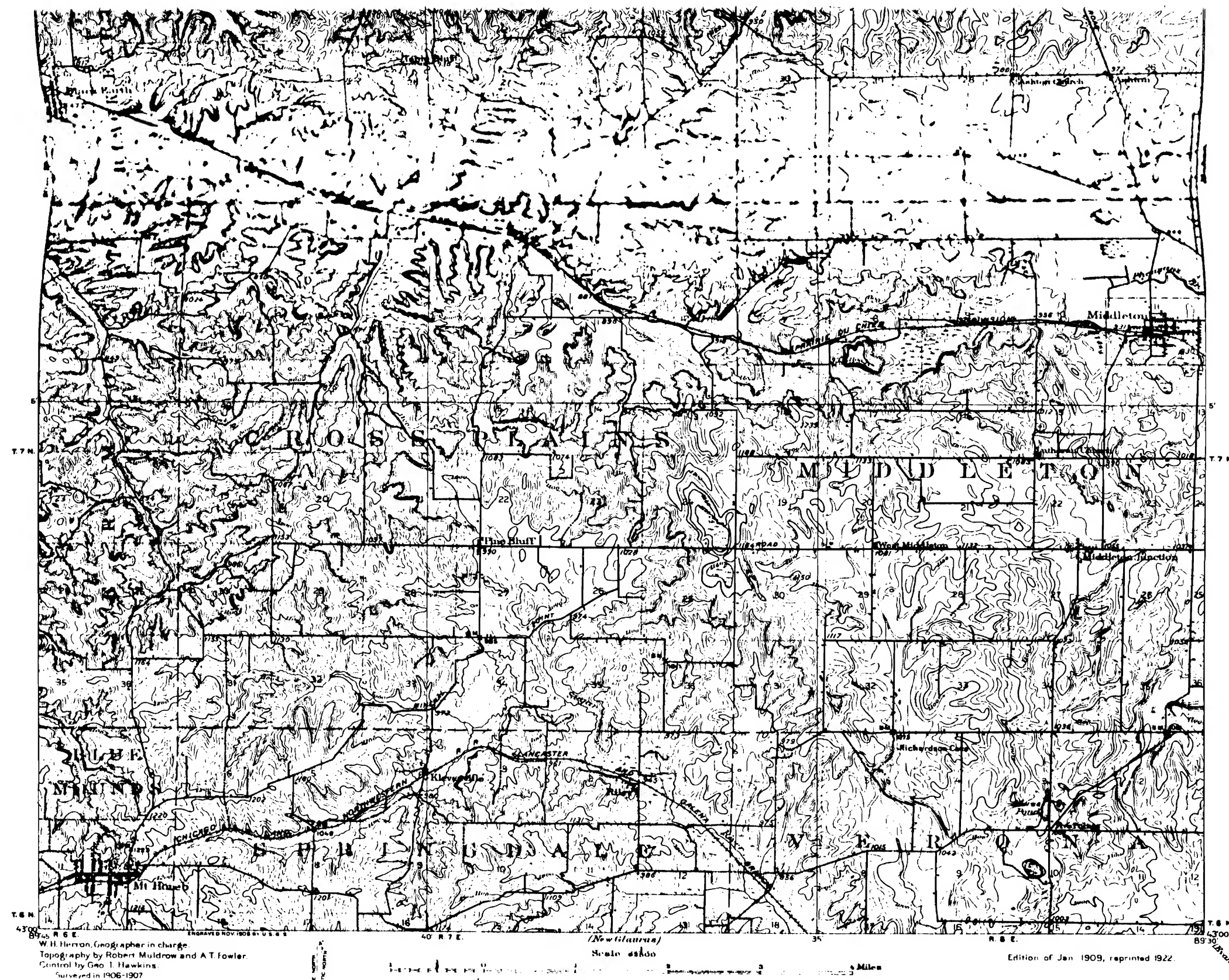


DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

WISCONSIN
(DANE COUNTY)
CROSS PLAINS QUADRANGLE





THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16 $\frac{1}{2}$ by 20 inches. Under the general plan adopted the country is divided into quadrangles, bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distance in feet, meter, and mile. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurement on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Survey of areas in which there are problems of great public importance, relating, for example, to mineral development, irrigation, or reclamation of swamp areas. Some made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = one-half mile), with a contour interval of 10, 20, or 100 feet.

2. Survey of areas in which there are problems of lesser public importance, such as most of the basin of the Mississippi and its tributaries, and lands with intricate areas to be shown in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = 1 mile), with a contour interval of 100 or 200 feet.

3. Survey of areas in which the problems are of less public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{250,000}$ (1 inch = nearly 2 miles), with a contour interval of 200 or 400 feet.

A topographic map of the United States, showing the general features of the country, is published on a scale of $\frac{1}{250,000}$ (1 inch = nearly 2 miles), with a contour interval of 200 or 400 feet.

work of great, such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger rivers, the lake, and the sea by blue water lining or blue out. The intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contour at certain regular intervals of altitude are shown. The line of the sea is itself a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and relief is shown in the figure below.



ing spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public road are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

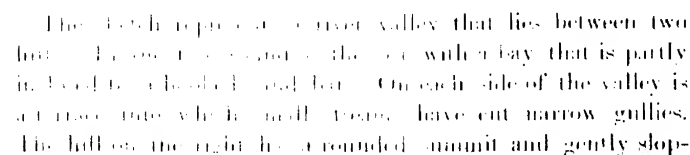
Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,200 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the names of mineral resources of a quadrangle are represented, and the maps showing these features are bound together with descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are of different prices. A discount of 50 per cent is allowed on orders for maps when the total amount of the order is \$10 or more. For more information, see the circular "How to Obtain Topographic Maps," published by the Geological Survey.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles have been mapped on a scale of $\frac{1}{625,000}$ or larger.

The feature shown on the map may be a name of a place group: (1) water, including sea, lake, river, pond, swamp, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture

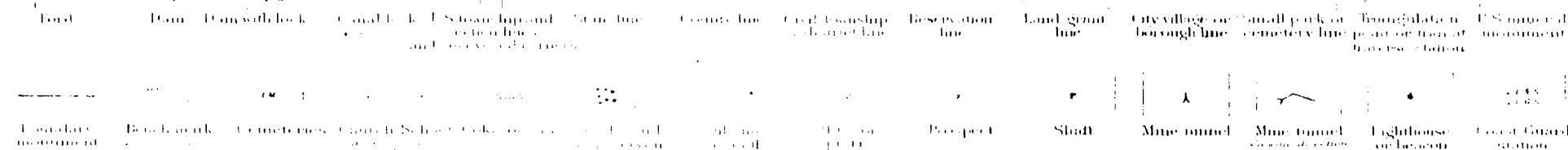


Index maps of each State and of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 10 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

STANDARD SYMBOLS

presented in the book

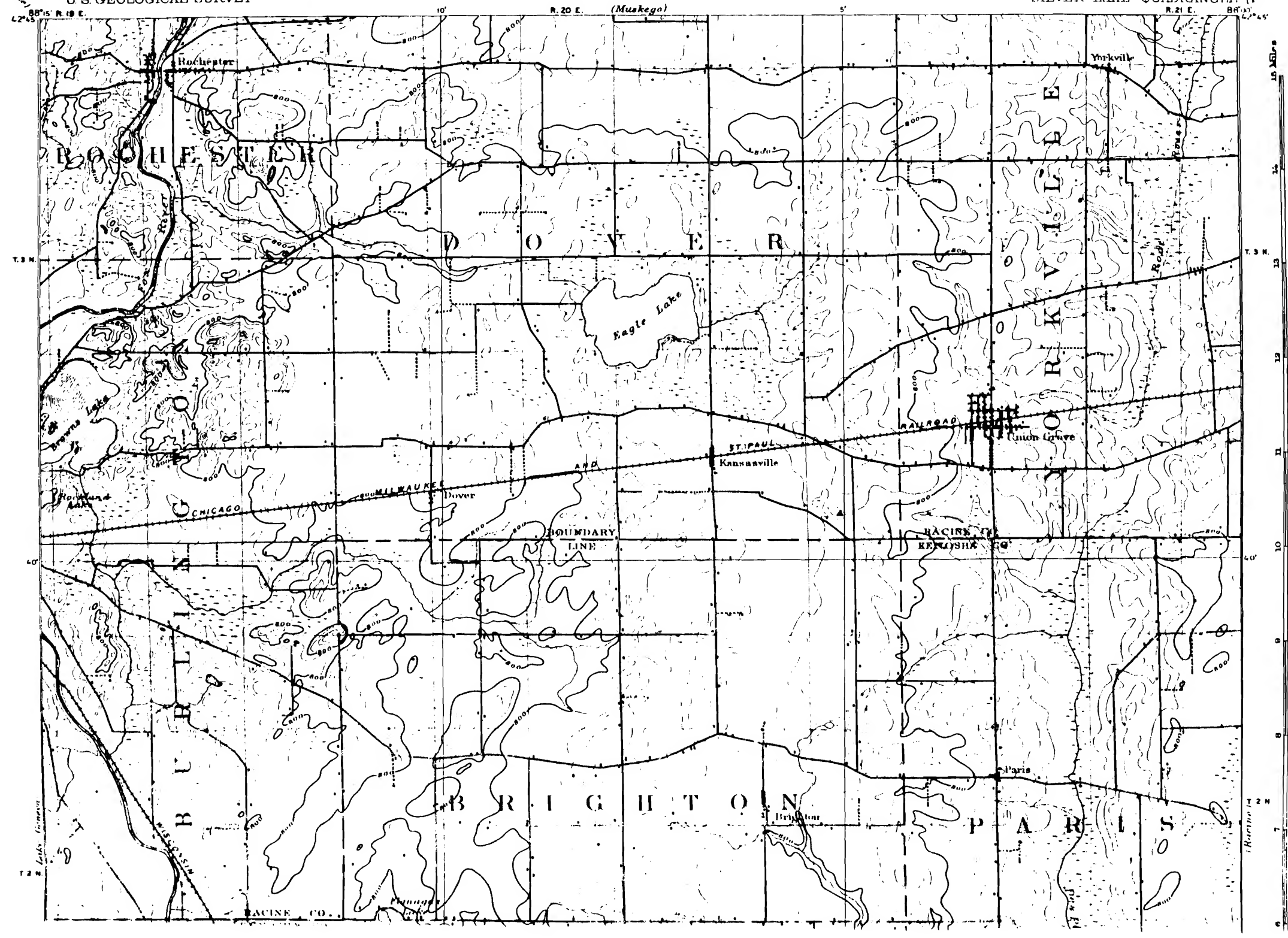


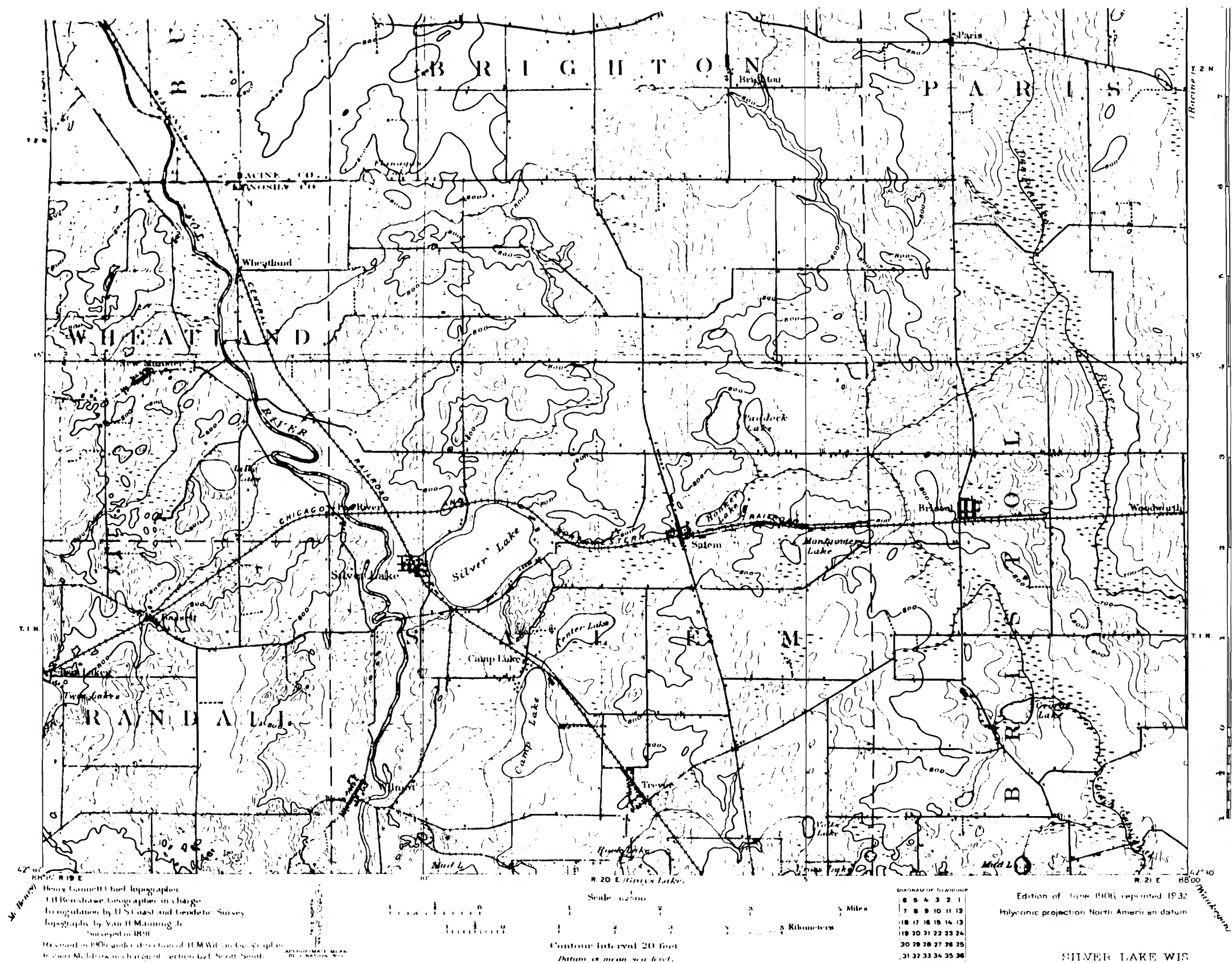
Journal of Interpersonal Violence

—printed in blue—

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
SILVER LAKE QUADRANGLE





THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale

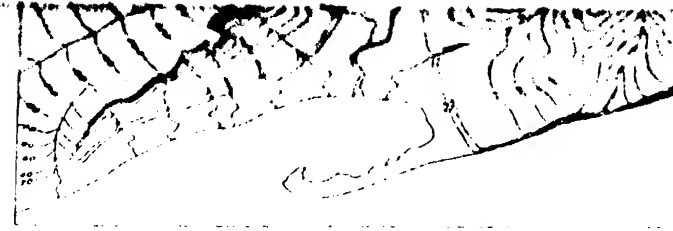
being for any quadrangle depending on its nature and probable future development, and consequently though the quadrangles are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map, such as 1 inch, 1 foot, or 1 meter, represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{62,500}$. Quadrangles in thickly settled or rich in important features are mapped on a scale of 1 inch to 1 mile, or 1 centimeter to 1609 meters, and cover areas ranging from 1 to 16 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2 miles, or 1 centimeter to 3218 meters, and cover areas ranging from 1 to 64 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4 miles, or 1 centimeter to 6436 meters, and cover areas ranging from 1 to 256 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 8 miles, or 1 centimeter to 12,872 meters, and cover areas ranging from 1 to 1,024 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 16 miles, or 1 centimeter to 25,744 meters, and cover areas ranging from 1 to 4,096 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 32 miles, or 1 centimeter to 51,488 meters, and cover areas ranging from 1 to 16,384 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 64 miles, or 1 centimeter to 102,976 meters, and cover areas ranging from 1 to 65,536 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 128 miles, or 1 centimeter to 205,952 meters, and cover areas ranging from 1 to 262,144 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 256 miles, or 1 centimeter to 411,904 meters, and cover areas ranging from 1 to 1,048,576 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 512 miles, or 1 centimeter to 823,808 meters, and cover areas ranging from 1 to 4,194,304 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,024 miles, or 1 centimeter to 1,647,616 meters, and cover areas ranging from 1 to 16,777,216 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,048 miles, or 1 centimeter to 3,295,232 meters, and cover areas ranging from 1 to 67,108,928 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,096 miles, or 1 centimeter to 6,590,464 meters, and cover areas ranging from 1 to 268,435,776 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 8,192 miles, or 1 centimeter to 13,180,928 meters, and cover areas ranging from 1 to 1,073,743,040 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 16,384 miles, or 1 centimeter to 26,361,856 meters, and cover areas ranging from 1 to 4,294,972,160 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 32,768 miles, or 1 centimeter to 52,723,712 meters, and cover areas ranging from 1 to 17,179,888,640 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 65,536 miles, or 1 centimeter to 105,447,424 meters, and cover areas ranging from 1 to 68,719,553,280 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 131,072 miles, or 1 centimeter to 210,894,848 meters, and cover areas ranging from 1 to 274,878,212,480 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 262,144 miles, or 1 centimeter to 421,789,696 meters, and cover areas ranging from 1 to 1,099,512,850,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 524,288 miles, or 1 centimeter to 843,579,392 meters, and cover areas ranging from 1 to 4,398,051,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,048,576 miles, or 1 centimeter to 1,687,158,784 meters, and cover areas ranging from 1 to 17,592,205,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,097,152 miles, or 1 centimeter to 3,374,317,568 meters, and cover areas ranging from 1 to 70,368,822,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,194,304 miles, or 1 centimeter to 6,748,635,136 meters, and cover areas ranging from 1 to 281,475,289,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 8,388,608 miles, or 1 centimeter to 13,497,270,272 meters, and cover areas ranging from 1 to 1,125,901,158,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 16,777,216 miles, or 1 centimeter to 26,994,540,544 meters, and cover areas ranging from 1 to 4,503,604,633,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 33,554,432 miles, or 1 centimeter to 53,989,081,088 meters, and cover areas ranging from 1 to 18,014,418,534,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 67,108,864 miles, or 1 centimeter to 107,978,162,176 meters, and cover areas ranging from 1 to 72,057,670,068,800,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 134,217,728 miles, or 1 centimeter to 215,956,324,352 meters, and cover areas ranging from 1 to 288,230,680,275,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 268,435,456 miles, or 1 centimeter to 431,912,648,704 meters, and cover areas ranging from 1 to 1,152,922,721,100,800,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 536,870,912 miles, or 1 centimeter to 863,825,297,408 meters, and cover areas ranging from 1 to 4,611,690,884,403,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,073,741,824 miles, or 1 centimeter to 1,727,650,594,816 meters, and cover areas ranging from 1 to 18,446,763,537,612,800,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,147,483,648 miles, or 1 centimeter to 3,455,301,189,632 meters, and cover areas ranging from 1 to 73,787,054,150,451,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,294,967,296 miles, or 1 centimeter to 6,910,602,379,264 meters, and cover areas ranging from 1 to 295,148,216,601,802,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 8,589,934,592 miles, or 1 centimeter to 13,821,204,758,528 meters, and cover areas ranging from 1 to 1,180,592,866,407,209,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 17,179,869,184 miles, or 1 centimeter to 27,642,409,517,056 meters, and cover areas ranging from 1 to 4,722,371,466,428,838,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 34,359,738,368 miles, or 1 centimeter to 55,284,819,034,112 meters, and cover areas ranging from 1 to 18,889,485,865,715,372,800,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 68,719,476,736 miles, or 1 centimeter to 110,569,638,068,224 meters, and cover areas ranging from 1 to 75,557,943,462,861,494,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 137,438,953,472 miles, or 1 centimeter to 221,139,276,136,448 meters, and cover areas ranging from 1 to 302,231,773,851,445,987,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 274,877,906,944 miles, or 1 centimeter to 442,278,552,272,896 meters, and cover areas ranging from 1 to 1,208,927,095,405,783,948,800,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 549,755,813,888 miles, or 1 centimeter to 884,557,104,545,792 meters, and cover areas ranging from 1 to 4,835,708,381,623,135,795,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,099,511,627,776 miles, or 1 centimeter to 1,769,114,209,091,584 meters, and cover areas ranging from 1 to 19,342,833,526,492,543,190,400,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,199,023,255,552 miles, or 1 centimeter to 3,538,228,418,183,168 meters, and cover areas ranging from 1 to 77,371,334,105,969,772,761,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,398,046,511,104 miles, or 1 centimeter to 7,076,456,836,366,336 meters, and cover areas ranging from 1 to 309,485,336,423,879,091,072,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 8,796,093,022,208 miles, or 1 centimeter to 14,152,913,672,732,672 meters, and cover areas ranging from 1 to 1,237,941,345,695,516,364,288,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 17,592,186,044,416 miles, or 1 centimeter to 28,305,827,345,465,344 meters, and cover areas ranging from 1 to 4,951,765,382,782,065,457,152,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 35,184,372,088,832 miles, or 1 centimeter to 56,611,654,690,930,688 meters, and cover areas ranging from 1 to 19,807,061,531,128,261,828,608,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 70,368,744,177,664 miles, or 1 centimeter to 113,223,309,381,861,376 meters, and cover areas ranging from 1 to 79,228,246,124,513,047,314,240,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 140,737,488,355,328 miles, or 1 centimeter to 226,446,618,763,722,752 meters, and cover areas ranging from 1 to 316,912,984,498,052,189,256,960,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 281,474,976,710,656 miles, or 1 centimeter to 452,893,237,527,445,504 meters, and cover areas ranging from 1 to 1,267,651,937,996,104,378,513,920,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 562,949,953,421,312 miles, or 1 centimeter to 905,786,475,054,891,008 meters, and cover areas ranging from 1 to 5,070,607,751,984,417,514,055,680,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,125,899,906,842,624 miles, or 1 centimeter to 1,811,572,950,109,782,016 meters, and cover areas ranging from 1 to 20,282,431,007,937,670,056,222,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,251,799,813,685,248 miles, or 1 centimeter to 3,623,145,900,219,564,032 meters, and cover areas ranging from 1 to 81,129,724,031,750,680,224,889,600,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,503,599,627,370,496 miles, or 1 centimeter to 7,246,291,800,439,128,064 meters, and cover areas ranging from 1 to 324,518,896,127,002,720,897,758,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 9,007,199,254,740,992 miles, or 1 centimeter to 14,492,583,600,878,256,128 meters, and cover areas ranging from 1 to 1,298,075,584,508,010,883,591,033,600,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 18,014,398,509,481,984 miles, or 1 centimeter to 28,985,167,201,756,512,256 meters, and cover areas ranging from 1 to 5,192,302,338,032,043,534,364,134,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 36,028,797,018,963,968 miles, or 1 centimeter to 57,970,334,403,513,024,512 meters, and cover areas ranging from 1 to 20,769,209,352,128,174,137,456,537,600,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 72,057,594,037,927,936 miles, or 1 centimeter to 115,940,668,807,026,049,024 meters, and cover areas ranging from 1 to 83,076,837,408,512,696,549,813,075,200,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 144,115,188,075,855,872 miles, or 1 centimeter to 231,881,337,614,052,098,048 meters, and cover areas ranging from 1 to 332,307,349,634,050,786,199,252,300,800,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 288,230,376,151,711,744 miles, or 1 centimeter to 463,762,675,228,104,196,096 meters, and cover areas ranging from 1 to 1,329,229,398,536,203,144,796,009,203,200,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 576,460,752,303,423,488 miles, or 1 centimeter to 927,525,350,456,208,392,192 meters, and cover areas ranging from 1 to 5,316,917,594,144,812,578,784,036,812,800,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,152,921,504,606,846,976 miles, or 1 centimeter to 1,855,050,700,912,416,784,384 meters, and cover areas ranging from 1 to 21,267,670,376,579,250,315,136,147,251,200,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,305,843,009,213,693,952 miles, or 1 centimeter to 3,710,101,401,824,833,568,768 meters, and cover areas ranging from 1 to 85,070,681,506,316,900,660,544,589,002,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,611,686,018,427,387,904 miles, or 1 centimeter to 7,420,202,803,649,667,137,536 meters, and cover areas ranging from 1 to 340,282,726,025,267,602,642,178,156,809,600,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 9,223,372,036,854,775,808 miles, or 1 centimeter to 14,840,405,607,299,334,275,072 meters, and cover areas ranging from 1 to 1,361,130,904,101,070,410,656,712,627,238,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 18,446,744,073,709,551,616 miles, or 1 centimeter to 29,680,811,214,598,668,550,144 meters, and cover areas ranging from 1 to 5,444,523,616,404,281,642,626,450,510,976,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 36,893,488,147,419,103,232 miles, or 1 centimeter to 59,361,622,429,197,337,100,288 meters, and cover areas ranging from 1 to 21,778,094,465,617,126,570,505,802,039,360,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 73,786,976,294,838,206,464 miles, or 1 centimeter to 118,723,244,858,394,674,200,576 meters, and cover areas ranging from 1 to 87,112,377,862,468,506,282,011,608,078,720,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 147,573,952,589,676,412,928 miles, or 1 centimeter to 237,446,489,716,789,348,401,152 meters, and cover areas ranging from 1 to 348,449,511,449,873,625,128,046,432,313,600,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 295,147,905,179,352,825,856 miles, or 1 centimeter to 474,892,979,433,578,696,802,304 meters, and cover areas ranging from 1 to 1,393,798,045,799,547,250,256,172,531,251,200,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 590,295,810,358,705,651,712 miles, or 1 centimeter to 949,785,958,867,157,393,604,608 meters, and cover areas ranging from 1 to 5,575,192,183,198,189,000,512,690,062,502,400,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,180,591,620,717,411,303,424 miles, or 1 centimeter to 1,899,571,917,734,314,787,209,216 meters, and cover areas ranging from 1 to 22,300,768,732,796,756,002,021,360,250,048,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,361,183,241,434,822,606,848 miles, or 1 centimeter to 3,799,143,835,468,629,574,418,432 meters, and cover areas ranging from 1 to 89,203,074,931,187,024,008,085,440,500,096,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,722,366,482,869,645,213,696 miles, or 1 centimeter to 7,598,287,670,937,259,148,836,864 meters, and cover areas ranging from 1 to 356,812,299,624,748,096,032,171,762,000,192,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 9,444,732,965,739,290,427,392 miles, or 1 centimeter to 15,196,575,341,874,518,297,673,728 meters, and cover areas ranging from 1 to 1,427,249,198,500,992,384,128,687,048,000,768,000,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 18,889,465,931,478,580,854,784 miles, or 1 centimeter to 30,393,150,683,749,036,595,347,456 meters, and cover areas ranging from 1 to 5,708,996,794,003,969,536,512,752,163,200,307,200,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 37,778,931,862,957,161,709,568 miles, or 1 centimeter to 60,786,301,367,498,073,190,694,912 meters, and cover areas ranging from 1 to 22,835,987,176,015,878,073,025,504,656,400,121,600,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 75,557,863,725,914,323,419,136 miles, or 1 centimeter to 121,572,602,734,996,146,381,389,824 meters, and cover areas ranging from 1 to 91,343,948,704,063,512,292,051,008,262,400,243,200 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 151,115,727,451,828,646,838,272 miles, or 1 centimeter to 243,145,205,469,992,292,762,779,648 meters, and cover areas ranging from 1 to 365,375,794,816,254,049,128,204,032,100,800,486,400 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 302,231,454,903,657,293,676,544 miles, or 1 centimeter to 486,290,410,939,984,585,525,559,296 meters, and cover areas ranging from 1 to 1,461,503,179,265,016,196,512,816,064,403,200,972,800 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 604,462,909,811,314,587,353,088 miles, or 1 centimeter to 972,580,821,879,969,171,051,118,592 meters, and cover areas ranging from 1 to 5,846,012,716,060,064,786,025,664,256,161,280,390,400 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,208,925,819,622,629,174,706,176 miles, or 1 centimeter to 1,945,161,643,759,938,342,102,237,184 meters, and cover areas ranging from 1 to 23,384,050,864,240,259,572,051,328,512,642,560,780,800 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,417,851,639,245,258,349,412,352 miles, or 1 centimeter to 3,890,323,287,519,876,684,204,474,368 meters, and cover areas ranging from 1 to 93,536,203,456,960,519,144,102,656,256,256,121,536,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,835,703,278,490,516,698,824,704 miles, or 1 centimeter to 7,780,646,575,039,753,368,408,948,736 meters, and cover areas ranging from 1 to 374,144,813,827,842,076,576,410,624,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 9,671,406,556,981,033,397,649,408 miles, or 1 centimeter to 15,561,293,150,079,506,736,817,897,472 meters, and cover areas ranging from 1 to 1,496,579,255,311,368,306,225,642,256,256,256,121,536,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 19,342,813,113,962,066,795,298,816 miles, or 1 centimeter to 31,122,586,300,159,013,473,635,794,944 meters, and cover areas ranging from 1 to 5,986,317,020,645,472,612,451,284,512,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 38,685,626,227,924,133,590,597,632 miles, or 1 centimeter to 62,245,172,600,318,026,947,271,589,888 meters, and cover areas ranging from 1 to 23,945,268,082,581,885,224,902,569,024,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 77,371,252,455,848,267,181,195,264 miles, or 1 centimeter to 124,490,345,200,636,053,894,543,179,776 meters, and cover areas ranging from 1 to 95,890,536,165,163,770,449,805,138,048,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 154,742,504,911,696,534,362,390,528 miles, or 1 centimeter to 248,980,690,401,272,107,789,086,359,552 meters, and cover areas ranging from 1 to 383,562,144,660,655,040,899,610,272,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 309,485,009,823,393,068,724,781,056 miles, or 1 centimeter to 497,961,380,802,544,215,578,172,719,104 meters, and cover areas ranging from 1 to 1,534,248,578,642,620,161,799,240,544,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 618,970,019,646,786,137,449,562,112 miles, or 1 centimeter to 995,922,761,605,088,431,156,345,438,208 meters, and cover areas ranging from 1 to 6,136,994,314,570,480,323,598,481,088,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 1,237,940,039,293,572,274,899,124,224 miles, or 1 centimeter to 1,991,845,523,210,176,862,312,690,876,416 meters, and cover areas ranging from 1 to 24,547,977,258,281,920,647,196,961,712,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 2,475,880,078,587,144,549,798,248,448 miles, or 1 centimeter to 3,983,691,046,420,353,724,625,381,752,832 meters, and cover areas ranging from 1 to 98,191,909,033,127,682,588,393,843,424,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 4,951,760,157,174,289,099,596,496,896 miles, or 1 centimeter to 7,967,382,092,840,707,449,250,763,505,664 meters, and cover areas ranging from 1 to 392,767,636,132,510,730,233,575,667,680,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 9,903,520,314,348,578,199,192,993,792 miles, or 1 centimeter to 15,934,764,185,681,414,898,501,527,011,328 meters, and cover areas ranging from 1 to 1,571,070,544,529,042,920,934,270,671,360,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 19,807,040,628,697,156,398,385,987,584 miles, or 1 centimeter to 31,869,528,371,362,829,797,003,054,022,656 meters, and cover areas ranging from 1 to 6,284,282,178,116,171,683,736,104,270,624,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 39,614,081,257,394,312,796,771,975,168 miles, or 1 centimeter to 63,739,056,742,725,659,594,006,108,045,312 meters, and cover areas ranging from 1 to 25,137,128,712,464,686,735,472,216,101,248,512,512,243,072,000 square miles. Quadrangles in less and less settled or rich quadrangles are mapped on a scale of 1 inch to 79,228,162,514,788,625,5

1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$ but about 3,500 square miles has been mapped on a scale of $\frac{1}{625,000}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{625,000}$.

The features shown on these maps may be arranged in three groups--(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land; (3) man-made features, including towns, cities, roads, railroads, and other features of human activity.



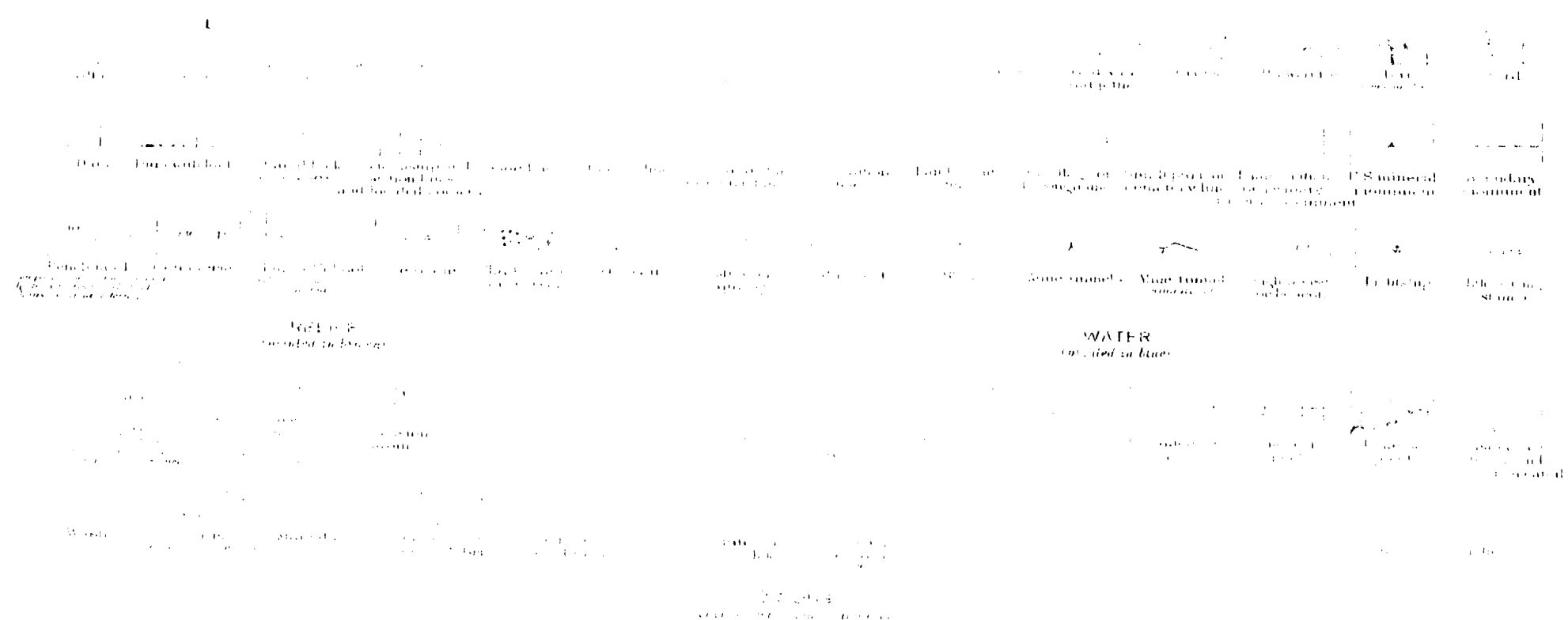
The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a headland. On each side of the valley is a hill, and the river flows from the hills towards the sea.

Use text to form a folio of the Geological Atlas of the United States.

Index maps of each state showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash or check for the price (not postage stamped) and should be addressed to:

CHIEF OF BUREAU,
U. S. GEOLOGICAL SURVEY,
WASHINGTON, D. C.



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
RACINE QUADRANGLE

42° 45' N. 21' E. 55' R. 22 E. (Bayview) 60' 87° 45' E. 42° 45' N.

CHICAGO MILWAUKEE RACINE

ST. PAUL RAILROAD

CHICAGO AND NORTH WESTERN RAILROAD

CHICAGO RIVER

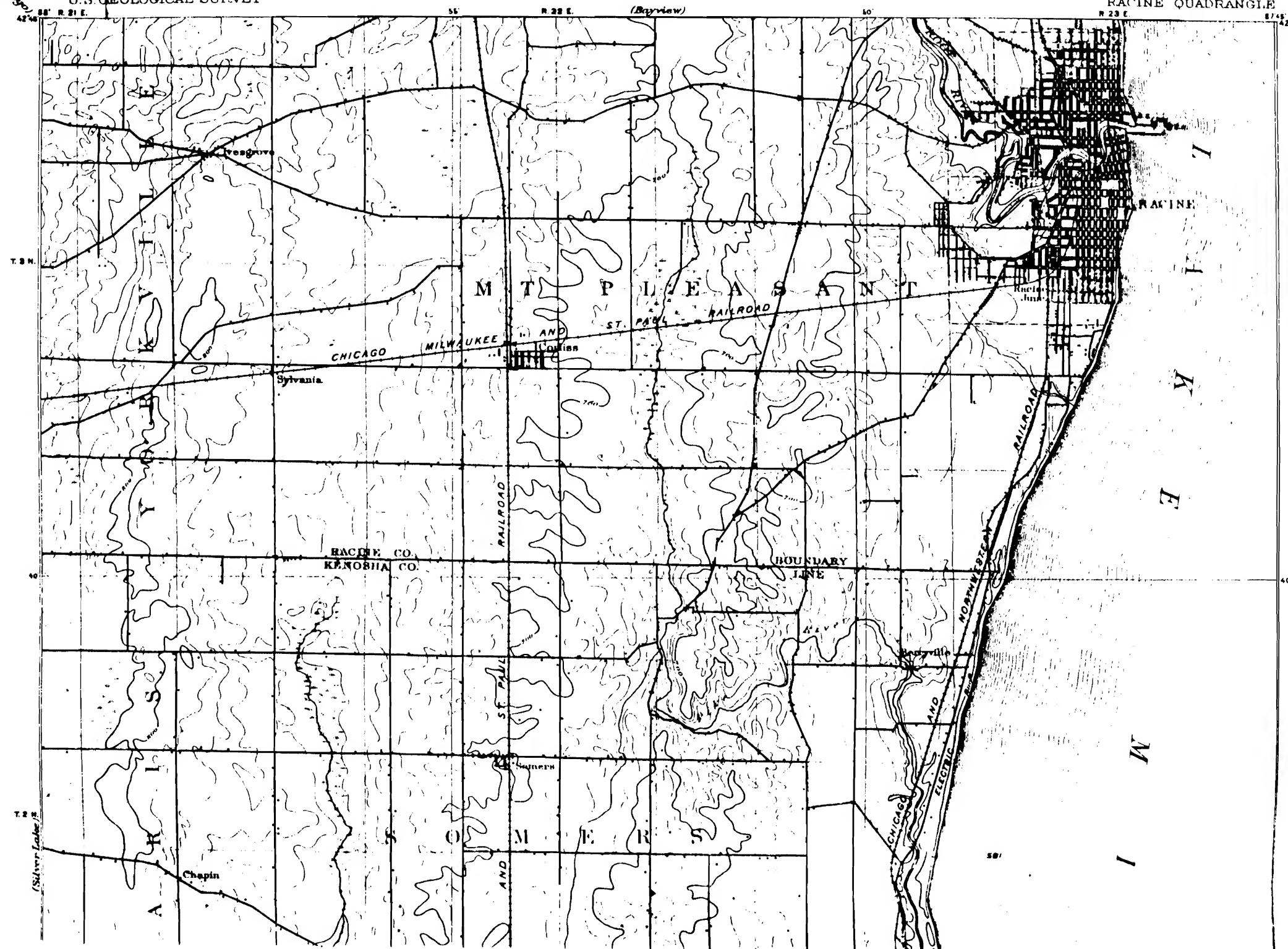
BOUNDARY LINE

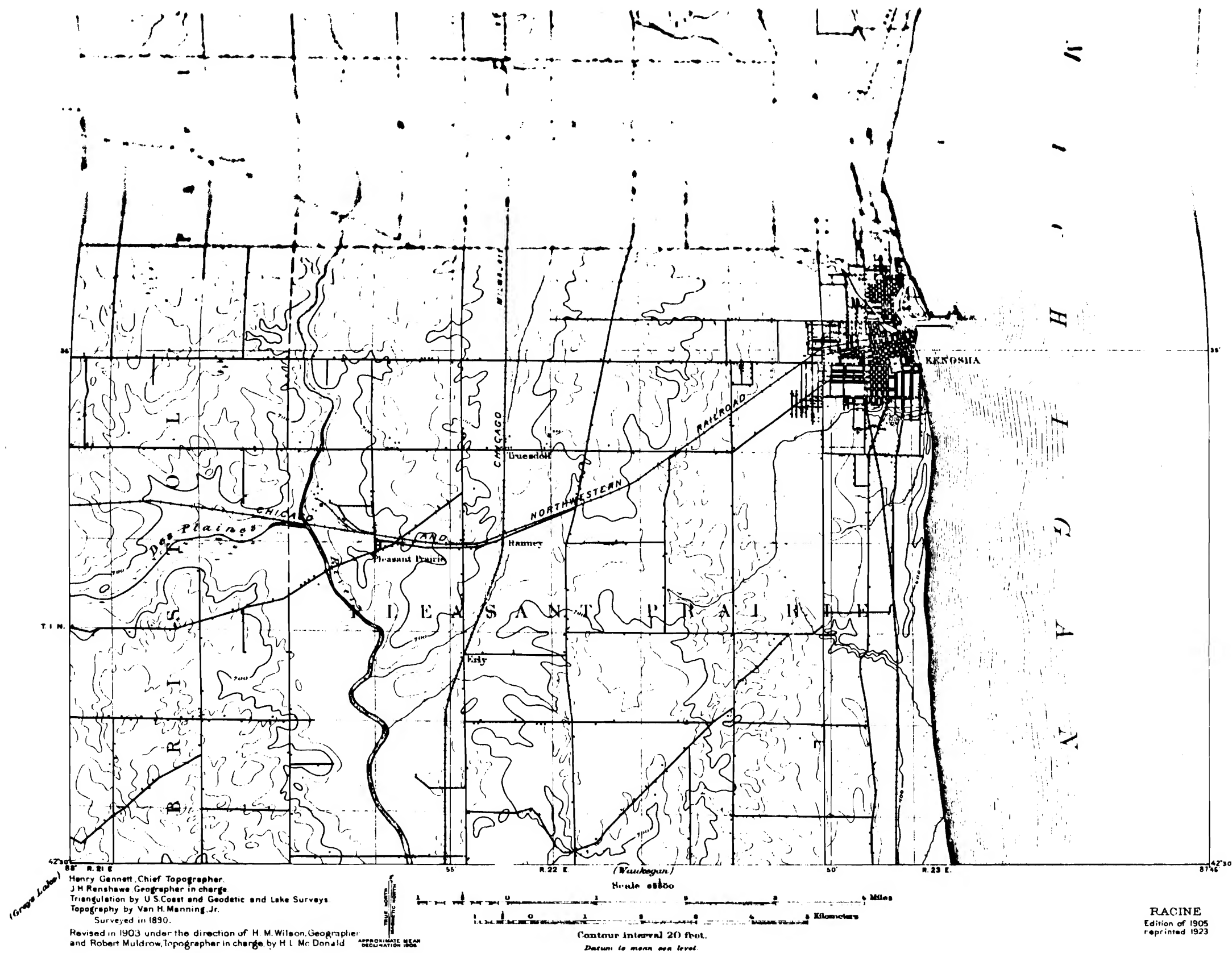
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Chapin

42° 45' N. 21' E. 55' R. 22 E. 60' 87° 45' E. 42° 45' N.

WISCONSIN
RACINE QUADRANGLE





Henry Gannett, Chief Topographer.
J. H. Renshaw, Geographer in charge.
Triangulation by U. S. Coast and Geodetic and Lake Surveys.
Topography by Van H. Manning, Jr.
Surveyed in 1890.
Revised in 1903 under the direction of H. M. Wilson, Geographer,
and Robert Muldrow, Topographer in charge, by H. L. McDonald.

APPROXIMATE MEAN
REDUCTION 1905

Contour interval 20 feet.
Datum to mean sea level.

RACINE
Edition of 1905
reprinted 1923

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps or atlas sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for any quadrangle depending on its nature and its probable future development, and consequently though the standard atlas sheets are of nearly uniform size they represent areas of different sizes. On the lower margin of each sheet are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

The standard scales used on these maps are multiples of the fraction $\frac{1}{62,500}$. Quadrangles in thickly settled or industrially important regions are mapped on a scale of $\frac{1}{25,000}$ or about 1 mile to an inch, and cover areas measuring 15' in latitude and 10' in longitude. Quadrangles in less thickly settled or industrially less important districts are mapped on a scale of $\frac{1}{50,000}$ or about 2 miles to an inch, and cover areas measuring 30' in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{100,000}$ or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{62,500}$.

A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{100,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$ but about 3,500 square miles

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the sea coast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 450 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metalled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

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and Alaska maps on a scale of $\frac{1}{62,500}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{125,000}$ but about 3,500 square miles has been mapped on a scale of $\frac{1}{250,000}$.

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The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a scarp. The bay at the left terminates abruptly at the valley in a steep scarp, from which it slopes down.

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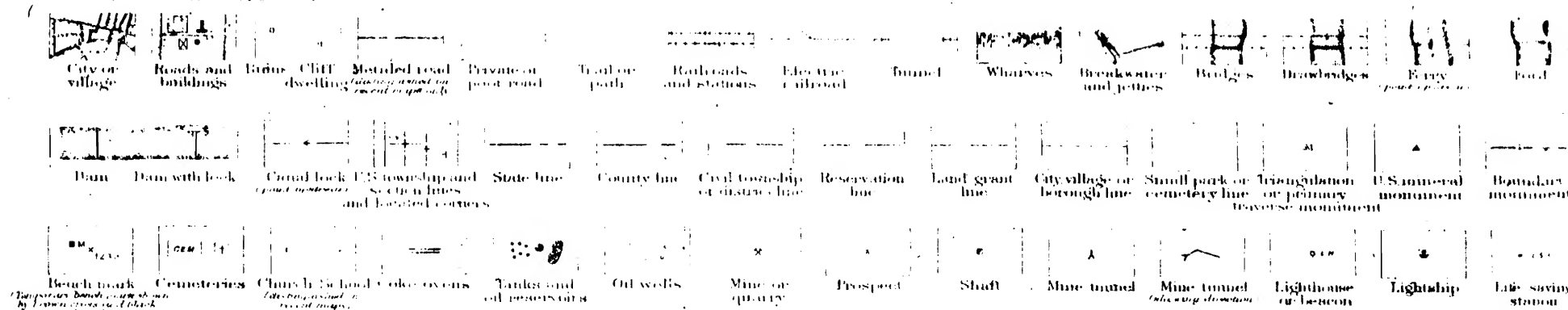
United States Geological Survey,

Washington, D. C.

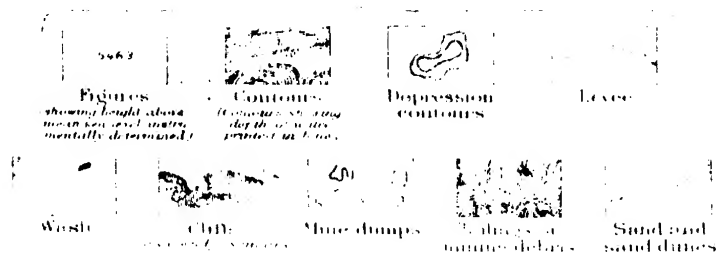
November, 1919.

CONVENTIONAL SIGNS

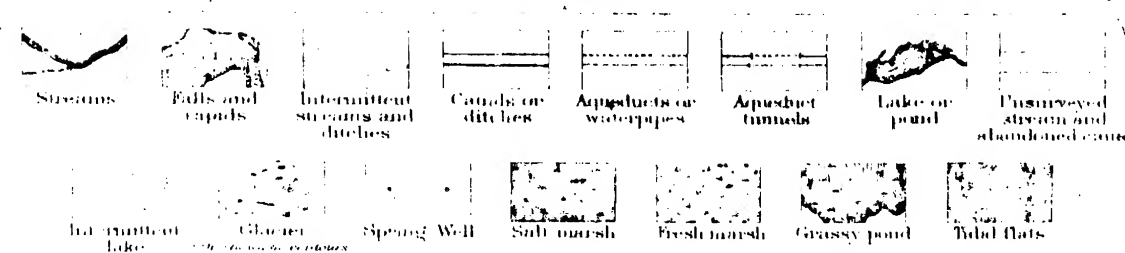
CULTURE (printed in black)



RELIEF (printed in brown)



WATER (printed in blue)



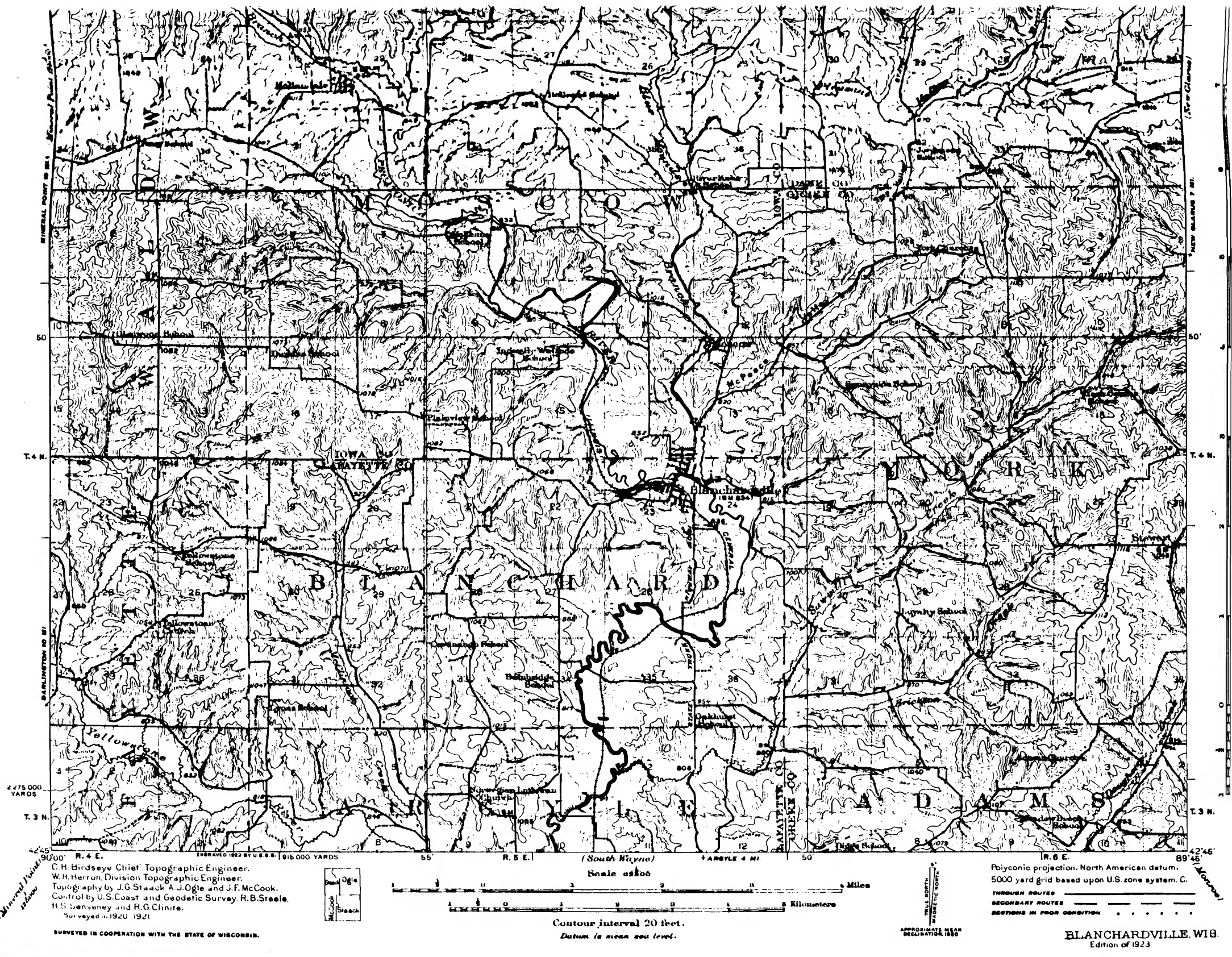
WOODS (when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

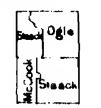
STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST

WISCONSIN
BLANCHARDVILLE QUADRANGLE





C.H. Birdseye Chief Topographic Engineer.
W.H. Heyrun Division Topographic Engineer.
Topography by J.G. Staack, A.J. Ogile and J.F. McCook.
Control by U.S. Coast and Geodetic Survey R.B. Steele.
H.S. Sweeney and R.G. Clinite.
Surveyed in 1920-1921.



Scale 1:50,000
Contour interval 20 feet.
Datum is mean sea level.

Polyconic projection, North American datum.
5000 yard grid based upon U.S. zone system C.
THROUGH ROUTES
SECONDARY ROUTES
SECTIONS IN POOR CONDITION
BLANCHARDVILLE, WIS.
Edition of 1923

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(3) Relief is shown by contour lines in brown. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in mapping only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour, for example, would be the shore line if the sea should rise 20 feet. Contour lines show the shapes of the hills, mountains, and valleys, as well as their altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.

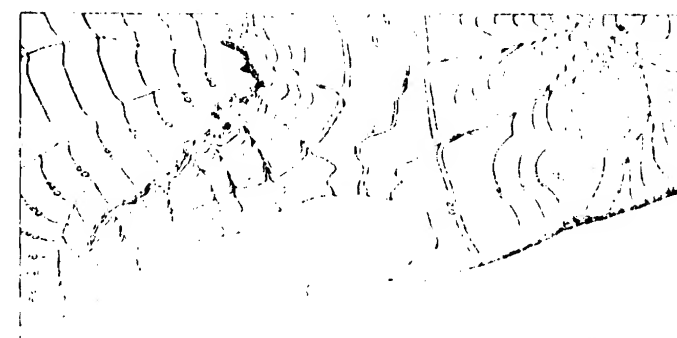
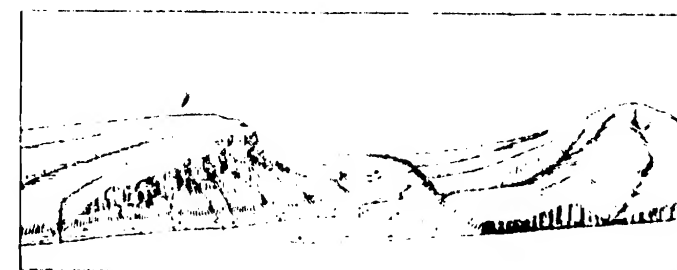


FIG. 1.—Manner in which contour lines express altitude, form, and grade. (a) Gentle slope; (b) steep slope; (c) cliff.

gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins that are issued free by the Geological Survey.

The lettering and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metalled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,800 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the map showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States.

Index maps of each State showing the topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the

About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{125,000}$ but about 3,500 square miles has been mapped on a scale of $\frac{1}{250,000}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes down.

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THE DIRECTOR,

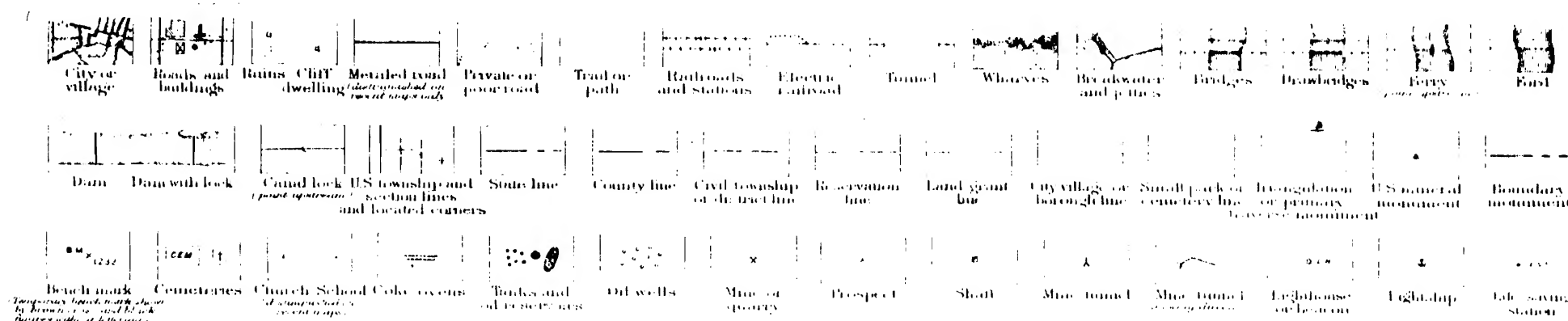
United States Geological Survey,

Washington, D. C.

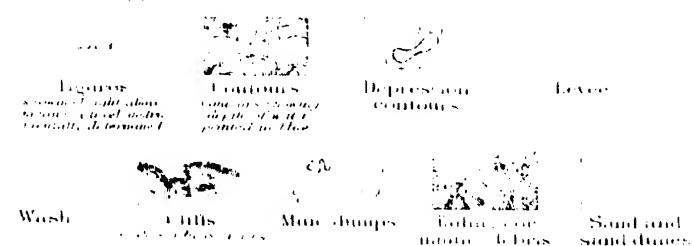
November, 1919.

CONVENTIONAL SIGNS

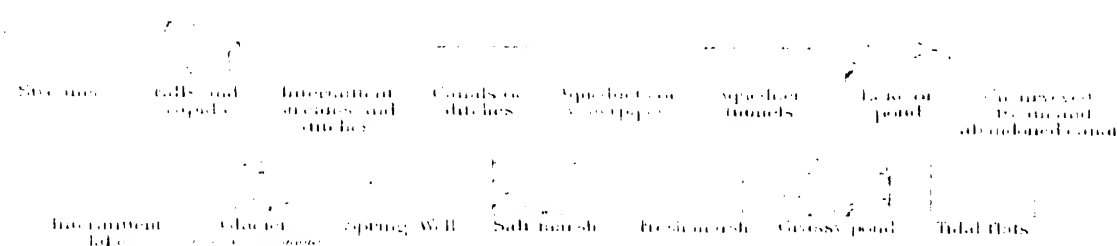
CULTURE (printed in black)



RELIEF (printed in brown)



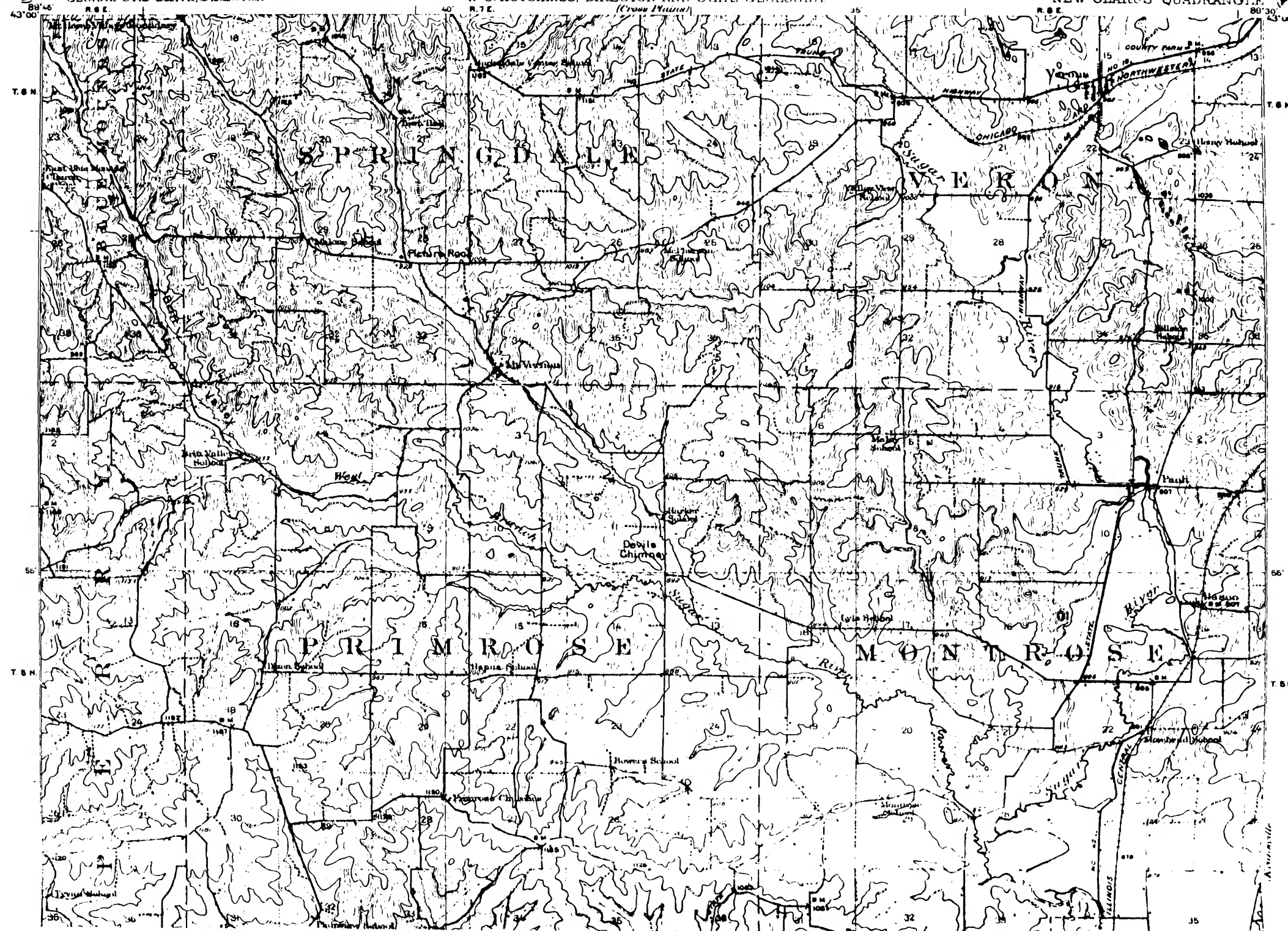
WATER (printed in blue)

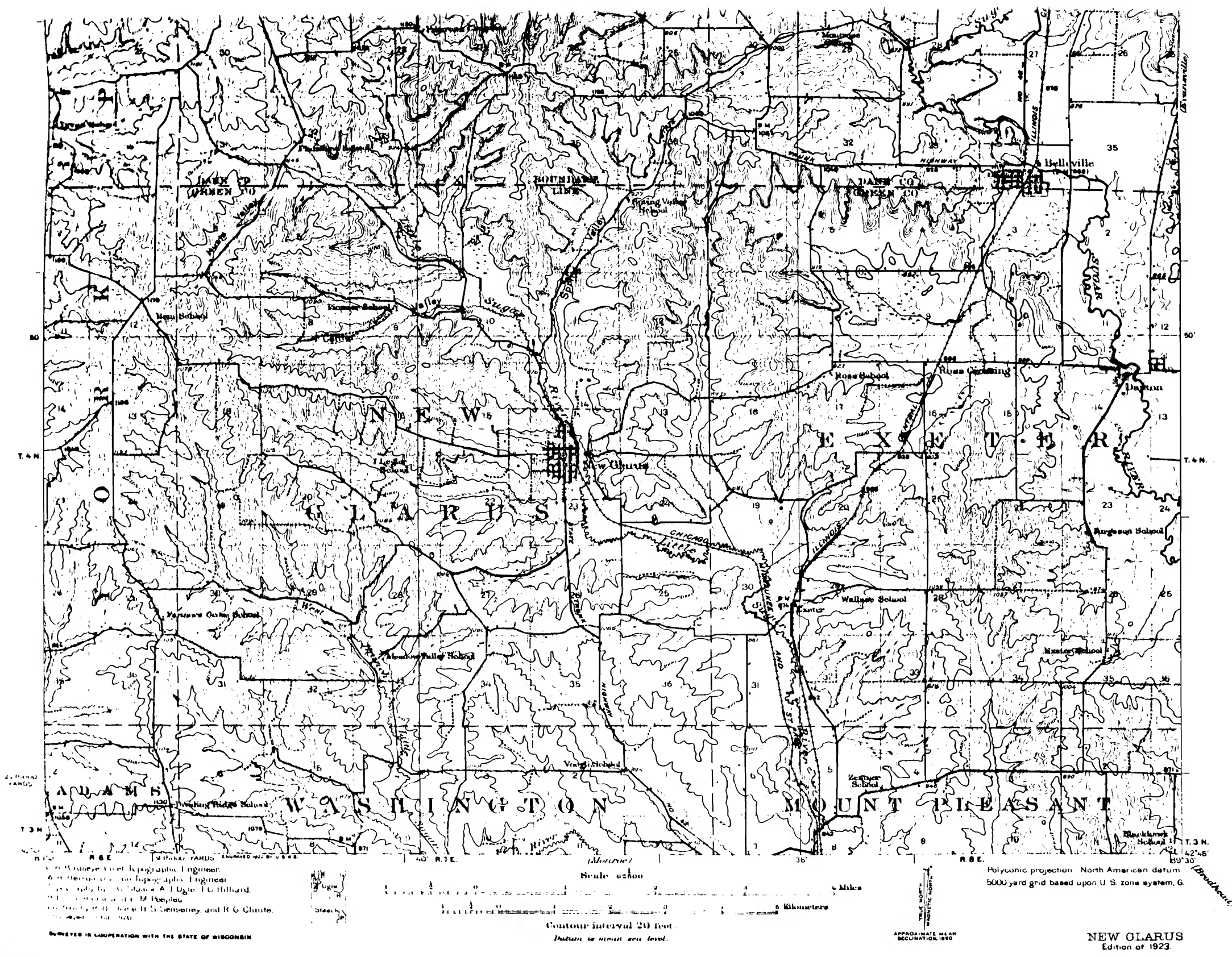


WATER (when at sea, printed in green)

TOPOGRAPHY
STATE OF WISCONSIN
GEOLOGICAL AND NATURAL HISTORY SURVEY
W. O. HOTCHKISS, DIRECTOR AND STATE GEOLOGIST
R. T. *(Cross Plains)*

WISCONSIN
NEW GLARUS QUADRANGLE





Compiled by: Chief Topographic Engineer
Checked by: Chief Topographic Engineer
Reviewed by: A. J. Dyer, T. G. Hillard,
C. J. Dyer, and M. H. Dyer.
Compiled by: H. G. Dyer, H. G. Dyer, and R. G. Dyer.
Copyright 1923.

Surveyed in cooperation with the State of Wisconsin

Scale: as shown
Miles
Kilometers
Contour interval 20 feet.
Datum is mean sea level.

Polyconic projection North American datum
5000 yard grid based upon U. S. zone system, G.

NEW GLARUS
Edition of 1923.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

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3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{250,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

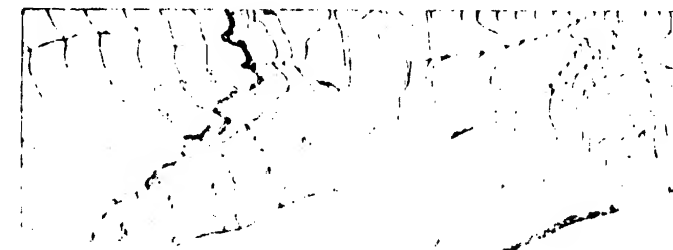
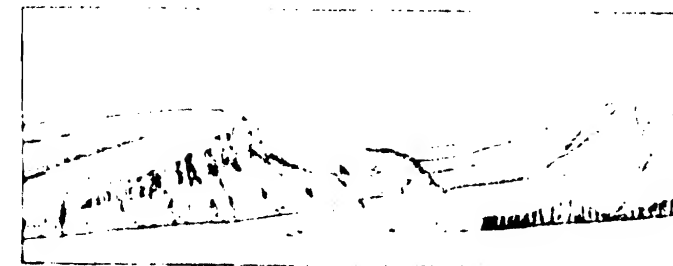
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boundary. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

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The manner in which contour lines express altitude, form, and grade is shown in the figure below.



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A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{125,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62,500}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{125,000}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



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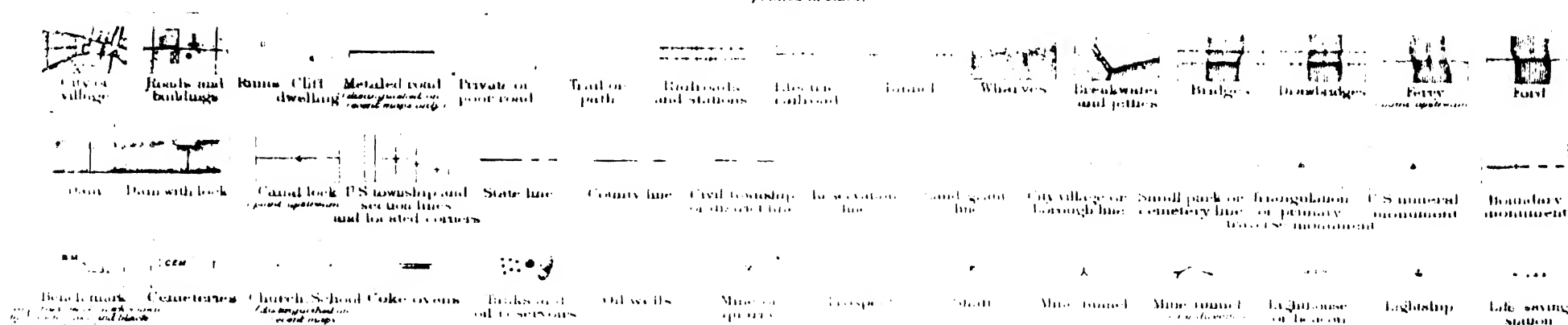
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

January, 1924.

CONVENTIONAL SIGNS

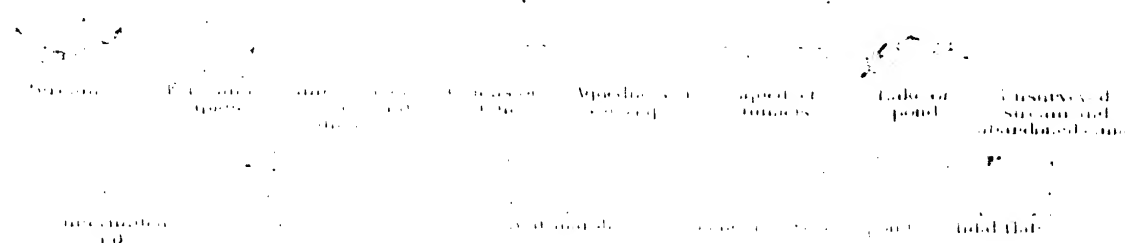
CULTURE (printed in black)



RELIEF (printed in brown)

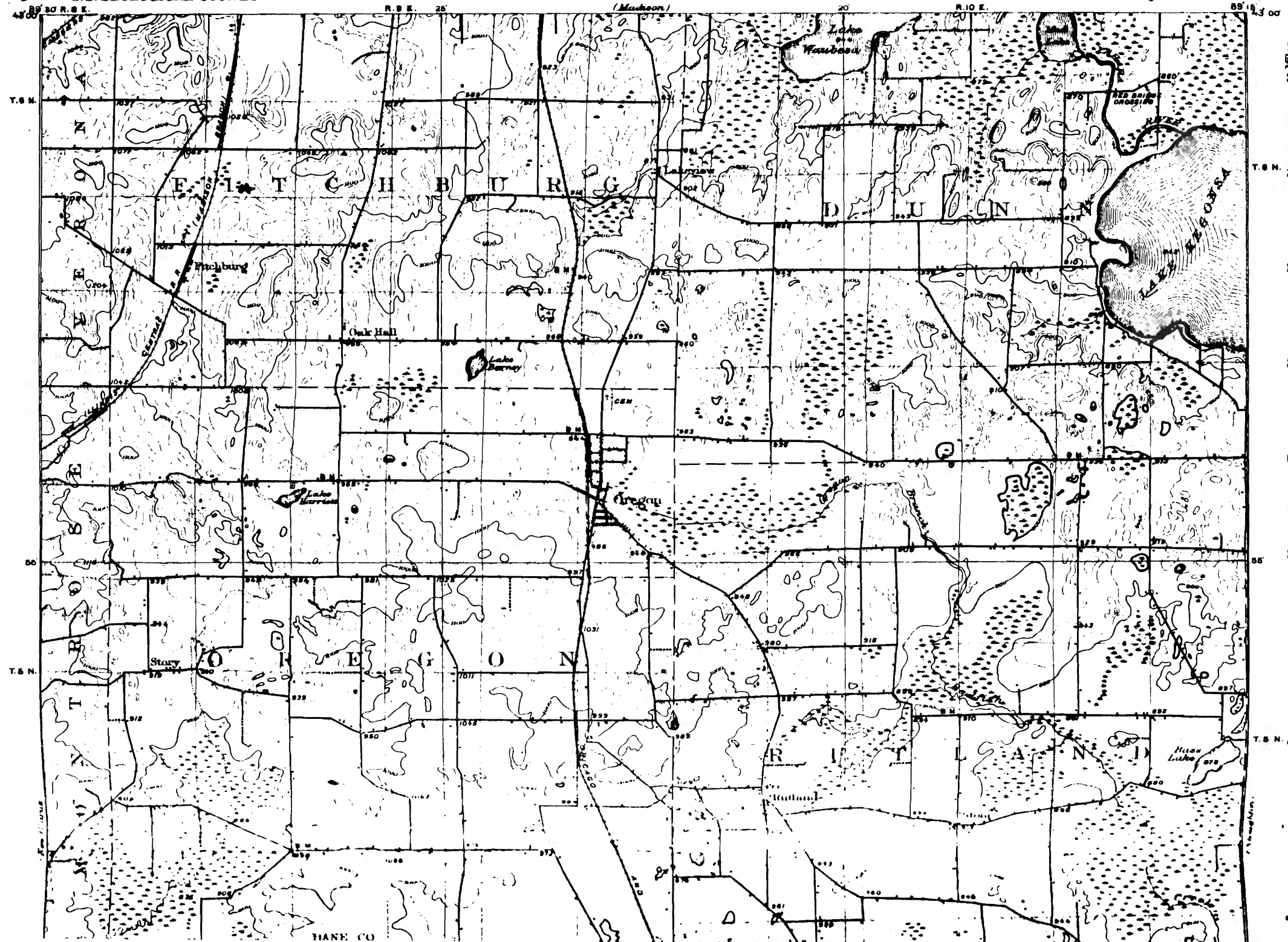


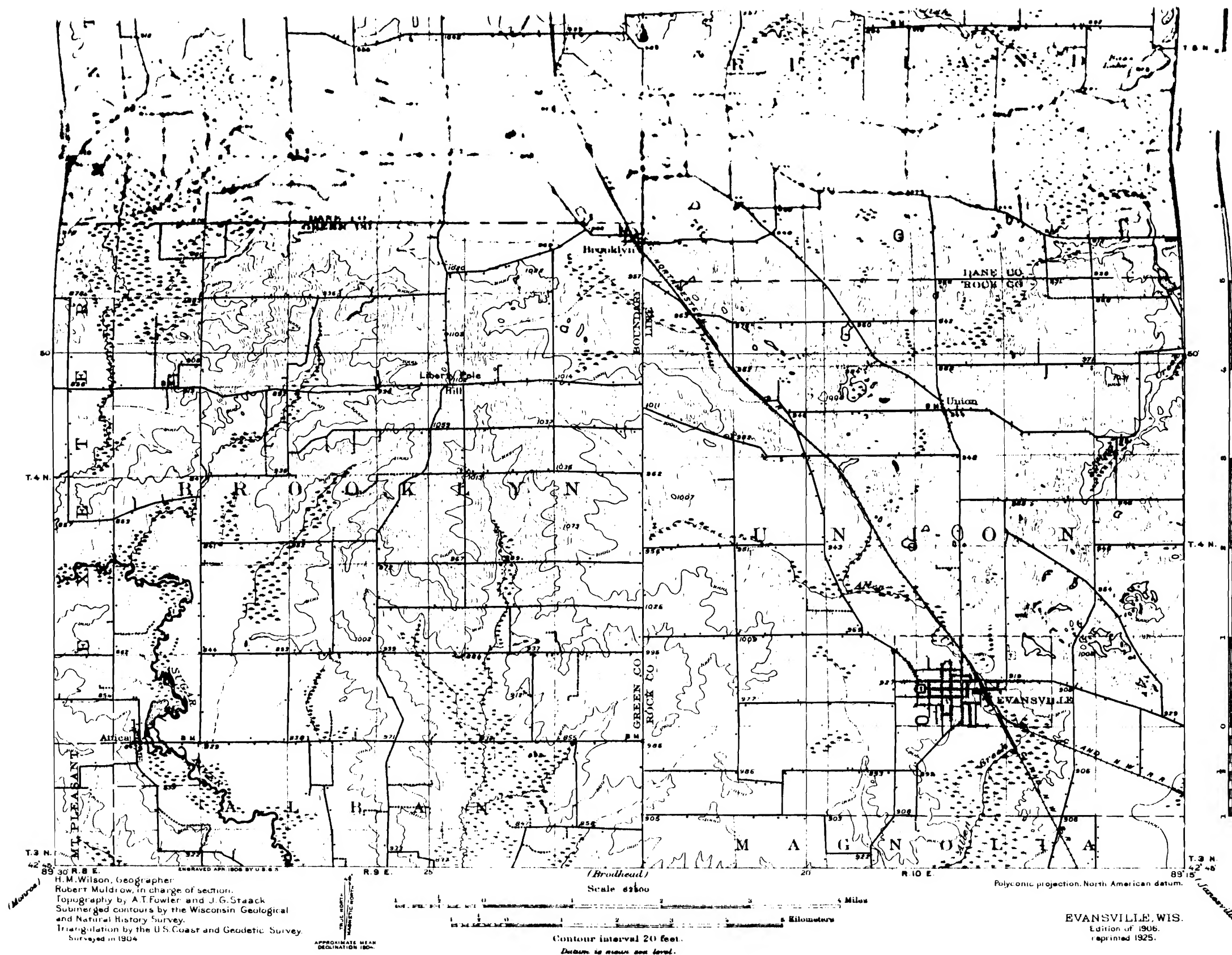
WATER (printed in blue)



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
EVANSVILLE QUADRANGLE





DESCRIPTION OF THE TOPOGRAPHIC MAP OF THE UNITED STATES

The United States Geological Survey is making a topographic map of the United States. This work has been in progress since 1882, and more than one third of the area of the country, excluding outlying possessions, has been mapped. The mapped areas are widely scattered, nearly every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This great map is being published in atlas sheets of convenient size, which are bounded by parallels and meridians. The four-cornered division of land corresponding to an atlas sheet is called a *quadrangle*. The sheets are of approximately the same size: the paper dimensions are 20 by 16 1/2 inches, the map occupies about 17 1/2 inches of height and 14 1/2 inches of width, the latter varying with latitude. Three scales, however, are employed. The largest scale is 1:62,500, or very nearly one mile to one inch; i. e., one linear mile on the ground is represented by one linear inch on the map. This scale is used for the third class, or least readily important parts of the country. For the greater part of the country an intermediate scale of 1:125,000, or about two miles to one inch, is employed. A third and still smaller scale of 1:250,000, or about four miles to one inch, has been used in the desert region of the West. A few special maps, on larger scales, have been printed, and are now being published, for the detailed mapping of certain localities, such as the San Francisco Bay region, the Colorado River region, and the Hawaiian Islands.

The maps are published in two series. The first series consists of the maps of the United States, and the second series consists of the maps of the Hawaiian Islands. The maps of the United States are published in two series, the first series consisting of the maps of the United States, and the second series consisting of the maps of the Hawaiian Islands.

times, are shown, not by full lines, but by lines of dots and dashes. Ponds which are dry during a part of the year are shown by oblique parallel lines. Salt-water marshes are shown by horizontal ruling interspersed with tufts of blue and fresh-water marshes and swamps by blue tufts with broken horizontal lines.

Relief is shown by contour lines, or *benches*. Each contour passes through points which have the same altitude. One who follows a contour on the ground will go neither up nor down, but on a level. By the use of contour lines only the shapes of the peaks, hills, and mountains are shown, but also the elevation. The line of the contour itself is a contour line, and the number of elevation bears upon it. The contour line at any 20 feet above each foot of the line, and would be the contour of the sea were it to rise on the land to that 20 feet. Such a line runs back into the valleys and forward to the peaks of hills and passes. On a contour map the contour lines are the present exact lines, which are very irregular, and it is this irregularity of the contour lines that gives the map its appearance of being a true picture of the ground. The contour lines are not straight, but they are very irregular, and it is this irregularity of the contour lines that gives the map its appearance of being a true picture of the ground.

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their descriptions, as well as the descriptions and reading coordinates of triangulation stations, are published in the annual report, and bearings of the survey. The publications pertaining to particular lines may be had on application.

The works of many other men, in which color and letters also are printed. Boundaries, ancient, county, city, land grant, reservation, etc., are shown by broken lines of different kinds and colors. These are shown by small black lines, and have been used to mark portions of cities and towns, and have been used to mark portions of cities and towns. Roads are shown by one double line (for the better roads), dotted for the inferior ones, and by single dotted lines, and railroad by full black lines with cross lines. Other cultural features are represented by conventions which are easily understood.

The sheets composing the topographic atlas are designated by the name of a principal town or of some prominent natural feature within the quadrangle and the names of adjoining published sheets are printed on the margins. They are sold at the same price when fewer than 100 copies are purchased, but when ordered in lots of 100 or more copies, a number of the sheets of different sheets, or parts of sheets, may be ordered.

The topographic maps are the basis on which the maps of the United States are made. The maps of the United States are made on the basis of the topographic maps. The maps of the United States are made on the basis of the topographic maps. The maps of the United States are made on the basis of the topographic maps.

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This paper is made by the
U. S. GEOLOGICAL SURVEY
WASHINGTON, D. C.

The features shown on this map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are grouped below. Various features appear on some maps of other states.

All water features are shown in blue, the mountains and hills in brown, and the relief in green. The culture features are shown in black.

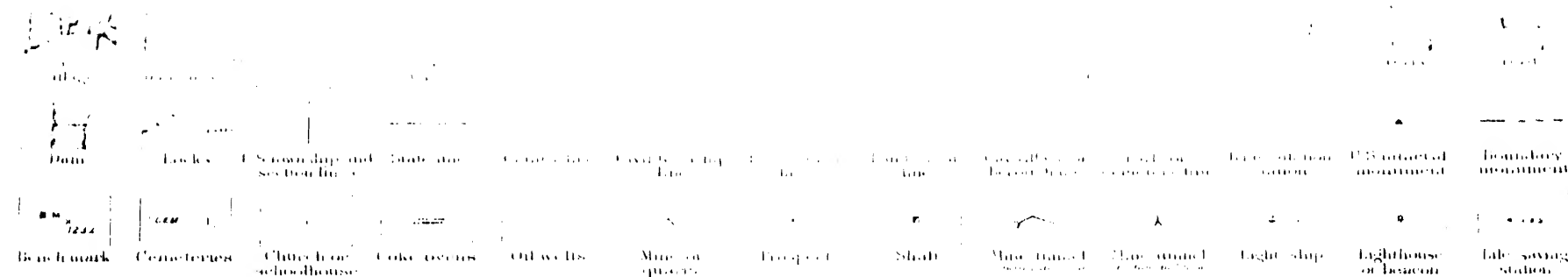
The interval between the contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped: in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The names of many definite points, such as towns, cities, and mountains, are printed on the map.

General Notes. The Atlas are sold at twenty-five cents each, excepting that such as are unusually comprehensive are priced accordingly.

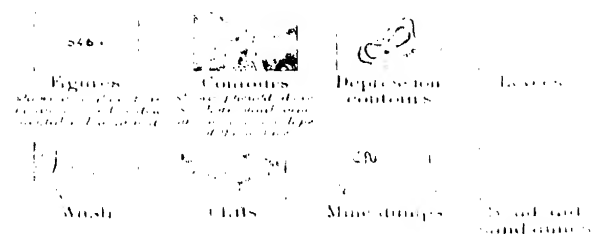
Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by cash, the exact amount—or by post-office money order, and should be addressed to—

THE DIRECTOR.

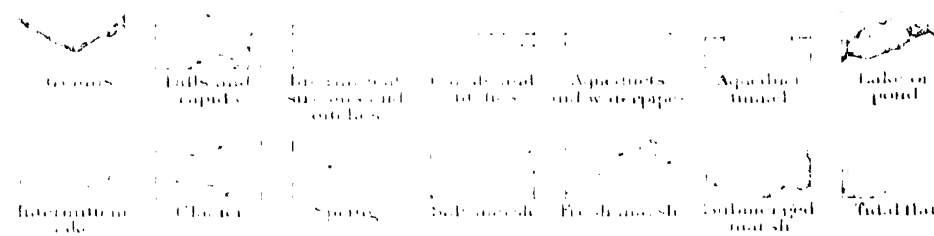
CONVENTIONAL SIGNS



RELIEF (printed in brown)



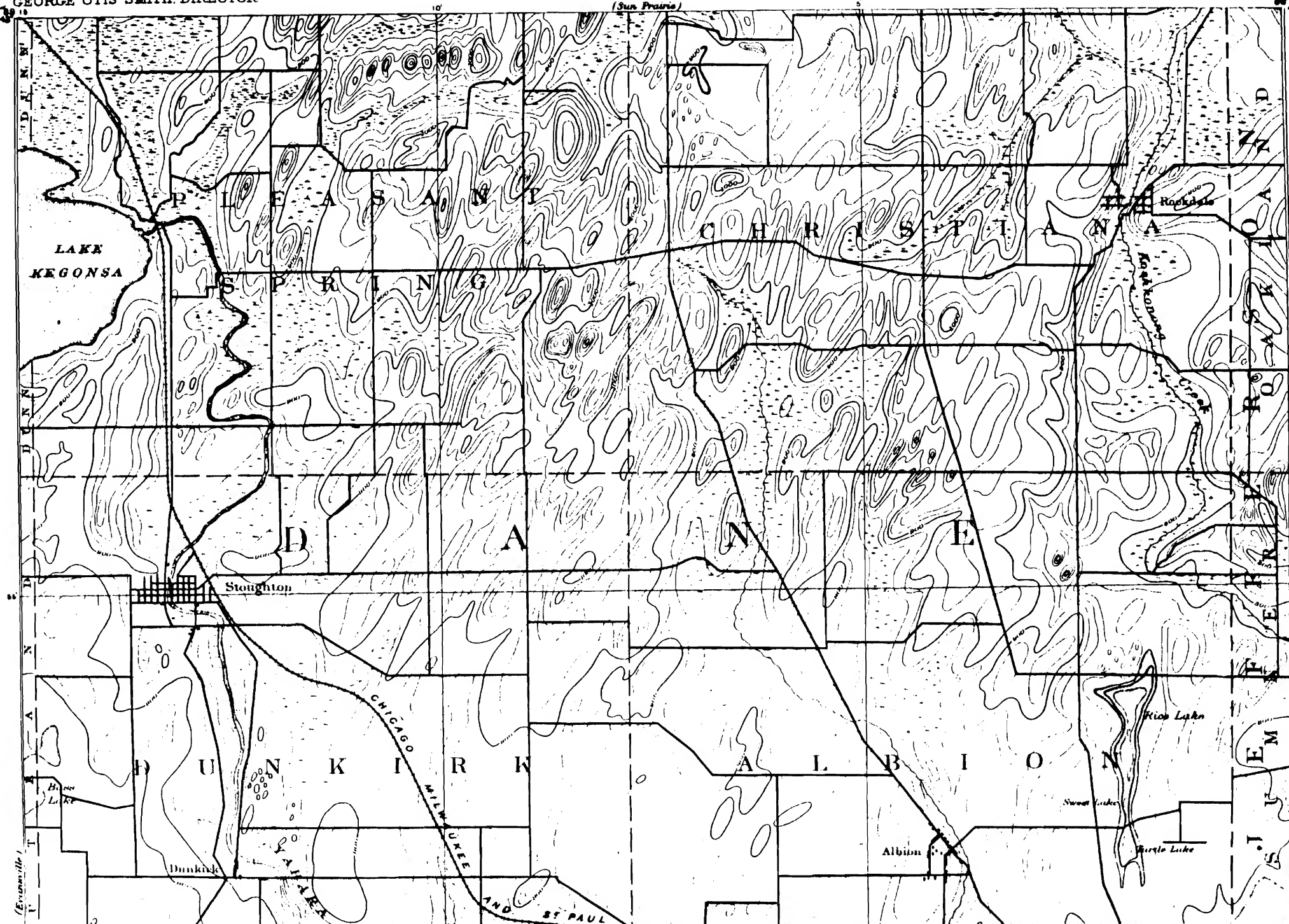
WATER (printed in blue)

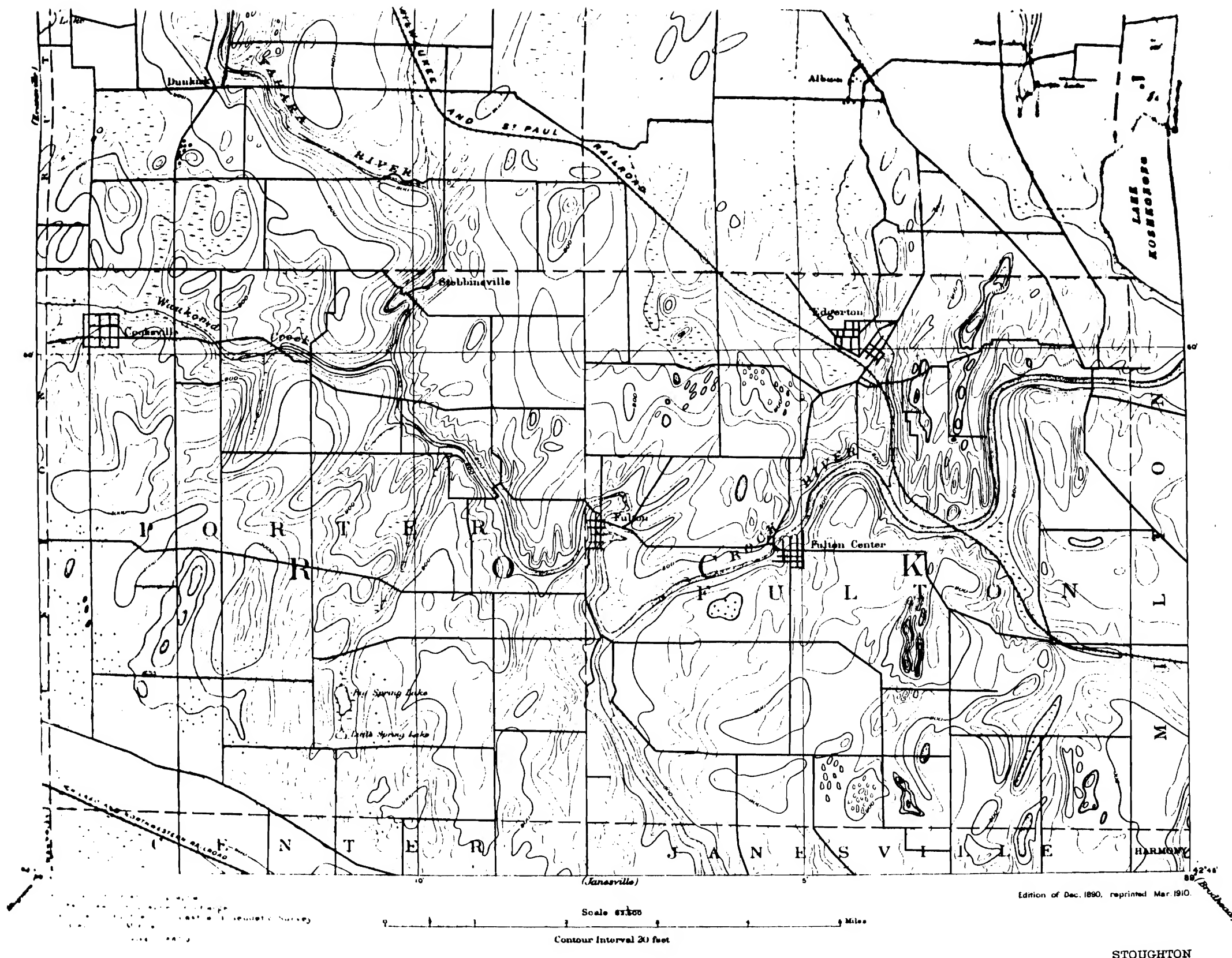


WOODS (shown in green, printed in green)

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WISCONSIN
STOUGHTON SHEET





THE TOPOGRAPHIC MAPS OF THE UNITED STATES

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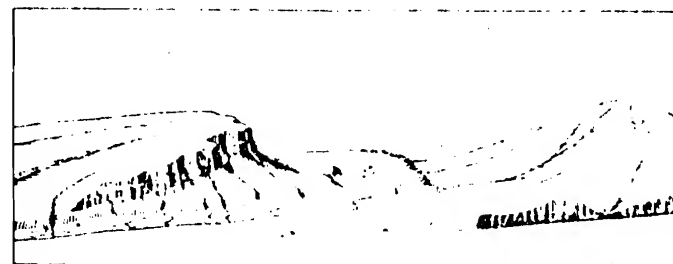
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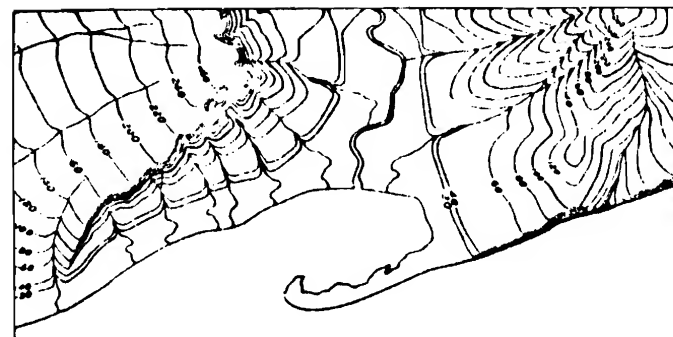
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 10 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic

public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch \approx nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{125,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at

States. More than 200 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

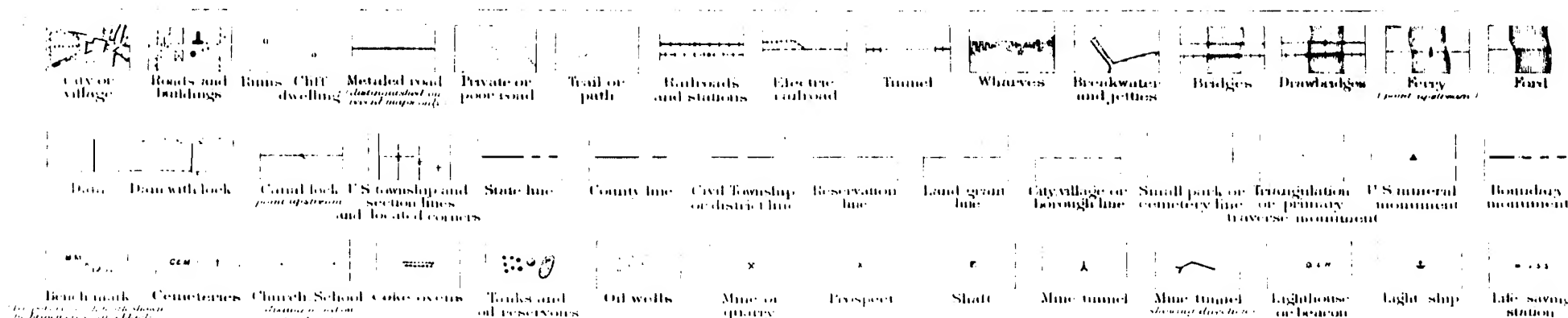
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

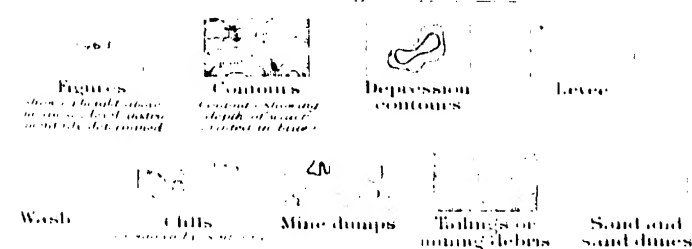
January, 1924.

CONVENTIONAL SIGNS

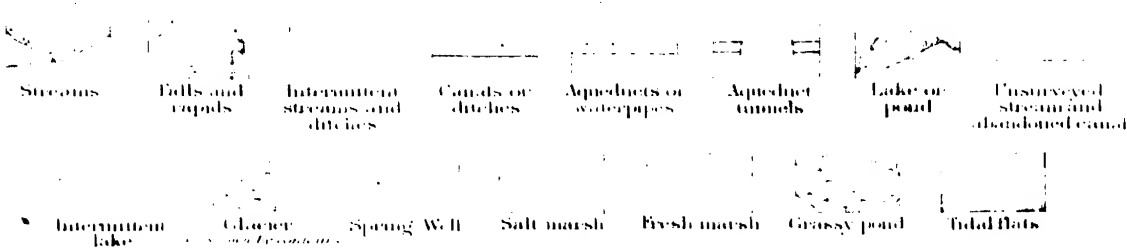
CULTURE (printed in black)



RELIEF (printed in brown)



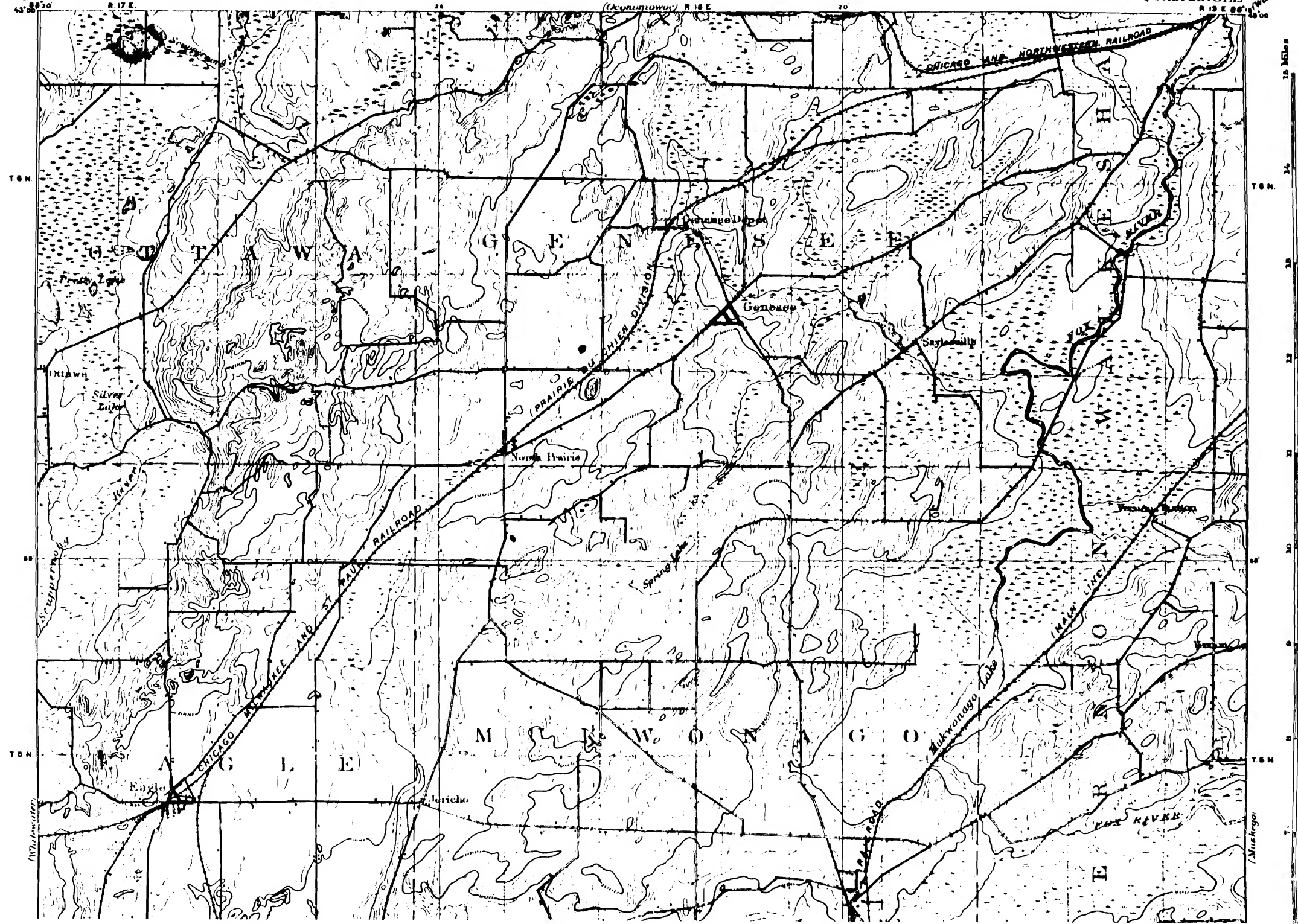
WATER (printed in blue)

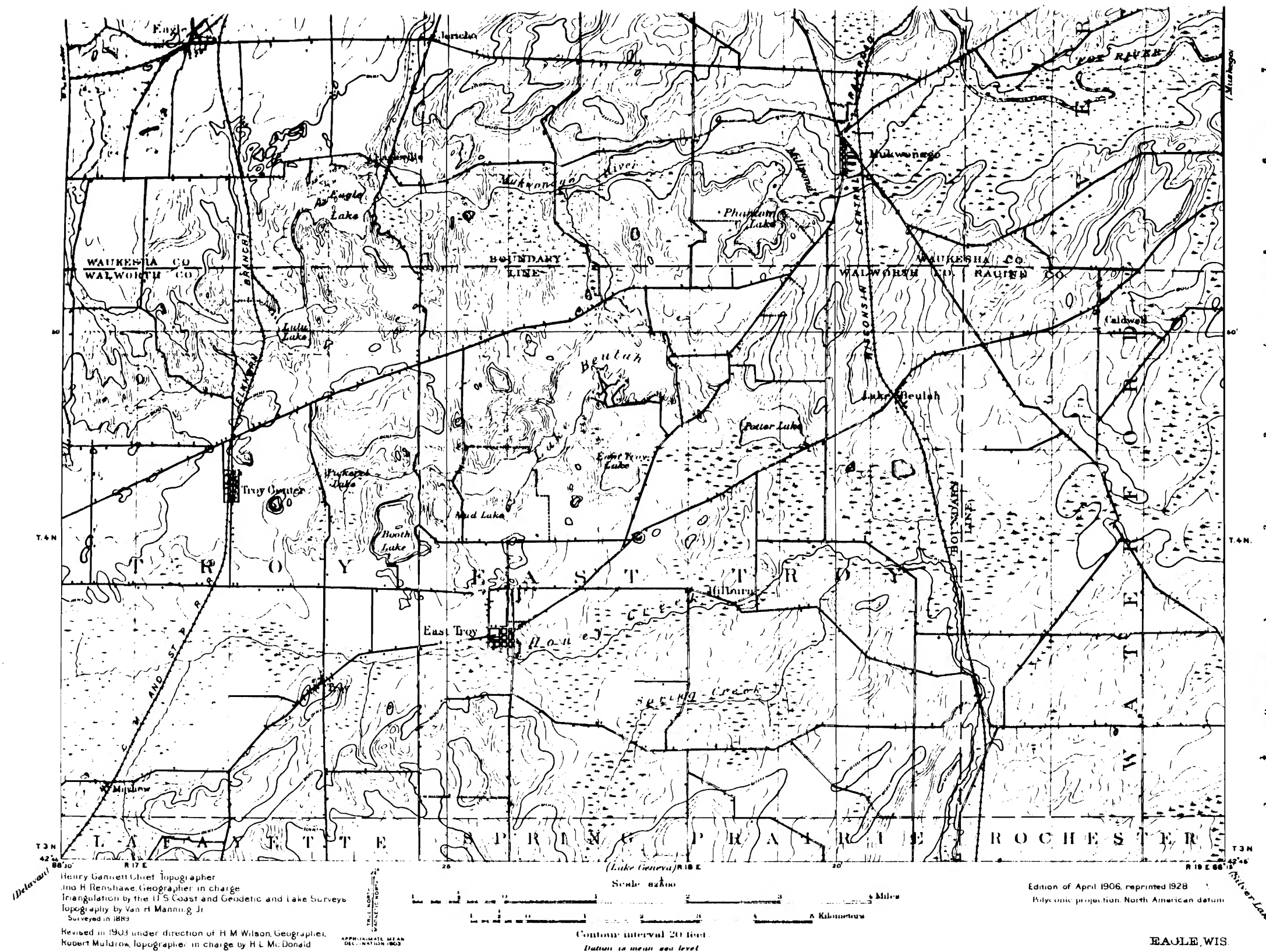


WOODS (when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
EAGLE QUADRANGLE





THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the outlying maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one-half mile, with a contour interval of 100 feet.

2. Surveys of areas in which the same problem of average public importance, such as most of the territory of the United States, is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

3. Surveys of areas in which the same problem of average public importance is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

4. Surveys of areas in which the same problem of average public importance is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

5. Surveys of areas in which the same problem of average public importance is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

6. Surveys of areas in which the same problem of average public importance is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

7. Surveys of areas in which the same problem of average public importance is concerned, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 200 feet.

(works of man), such as towns, cities, roads, and railroads, are shown and explained below. Variations appear on some earlier maps, and additional features are represented on the special maps.

All the water features are represented on the standard maps: streams and canals by single blue lines and the larger rivers by double blue lines; the lakes, and the sea by blue water lines or blue areas; and the intermittent streams—those whose beds are dry most of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown. These maps are supplemented by shading showing the general form thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground to which every point of which is at the same altitude above sea level. It can, therefore, be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the sea coast itself is a contour, the datum of zero altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, and the relative altitudes. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run to and fro indicate a hill or a valley.

The manner in which contour lines are represented on the map and graphically shown in the figure is as follows:



contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines—every fourth or fifth one—are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, corners of lakes, and bench marks—are also given on the map (except in the case of bench marks—as well as the geodetic stations)—published in bulletins issued by the Geological Survey.

Boundaries of the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by thin double lines, poor motor or private roads by thin single lines, and trails by dashed single lines. Each quadrangle is designated by the name of a city, town, or village within it, and on the margin of the map are given the names of adjoining quadrangles of the same scale published. Over 3,300 quadrangles in the United States have been surveyed, and maps of them have been published on the other side of this sheet have been published.

The topographic map is the base on which the other maps of the atlas are based. The quadrangles are represented on the map by a series of horizontal lines, each labeled with a number representing altitude. The lines are spaced at regular intervals, showing how the contour interval affects the representation of the hill's slope. The diagram is labeled 'FIG. 1. Contour lines'.

The topographic map is the base on which the other maps of the atlas are based. The quadrangles are represented on the map by a series of horizontal lines, each labeled with a number representing altitude. The lines are spaced at regular intervals, showing how the contour interval affects the representation of the hill's slope. The diagram is labeled 'FIG. 1. Contour lines'.

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The topographic map is the base on which the other maps of the atlas are based. The quadrangles are represented on the map by a series of horizontal lines, each labeled with a number representing altitude. The lines are spaced at regular intervals, showing how the contour interval affects the representation of the hill's slope. The diagram is labeled 'FIG. 1. Contour lines'.

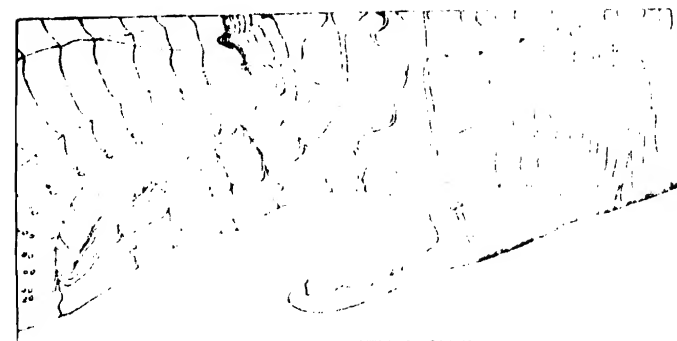
The topographic map is the base on which the other maps of the atlas are based. The quadrangles are represented on the map by a series of horizontal lines, each labeled with a number representing altitude. The lines are spaced at regular intervals, showing how the contour interval affects the representation of the hill's slope. The diagram is labeled 'FIG. 1. Contour lines'.

put the importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{125,000}$ but about 1000 square miles have been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups: (1) water, including sea, lakes, rivers, canal, swamps, and other bodies of water; (2) relief, including mountain, hill, valley, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and is partly bogged.

Some of the maps and folios have been published.

Index maps of each State and of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for map amounts to 50 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

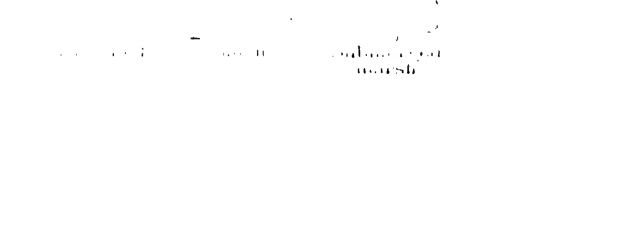
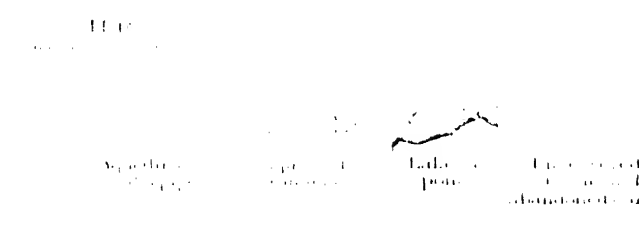
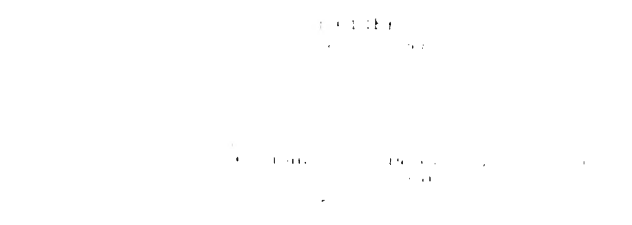
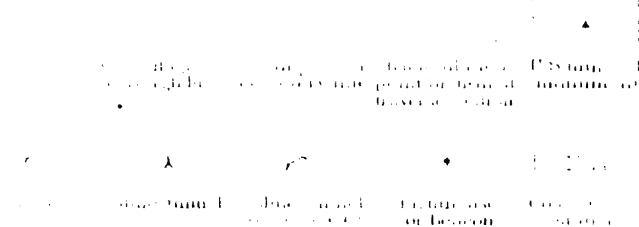
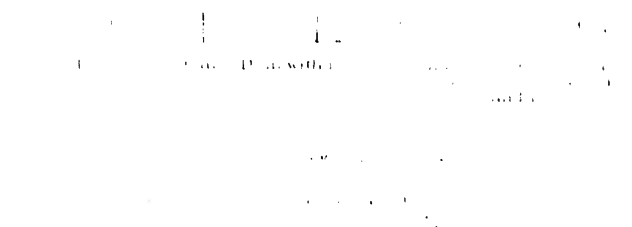
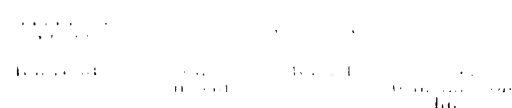
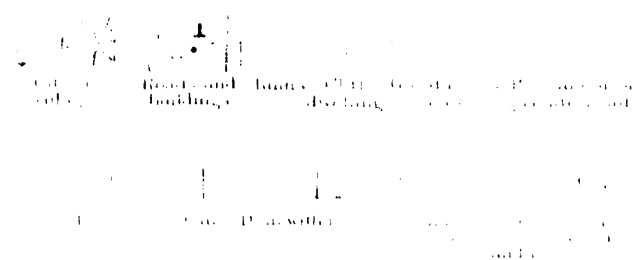
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

September, 1928.

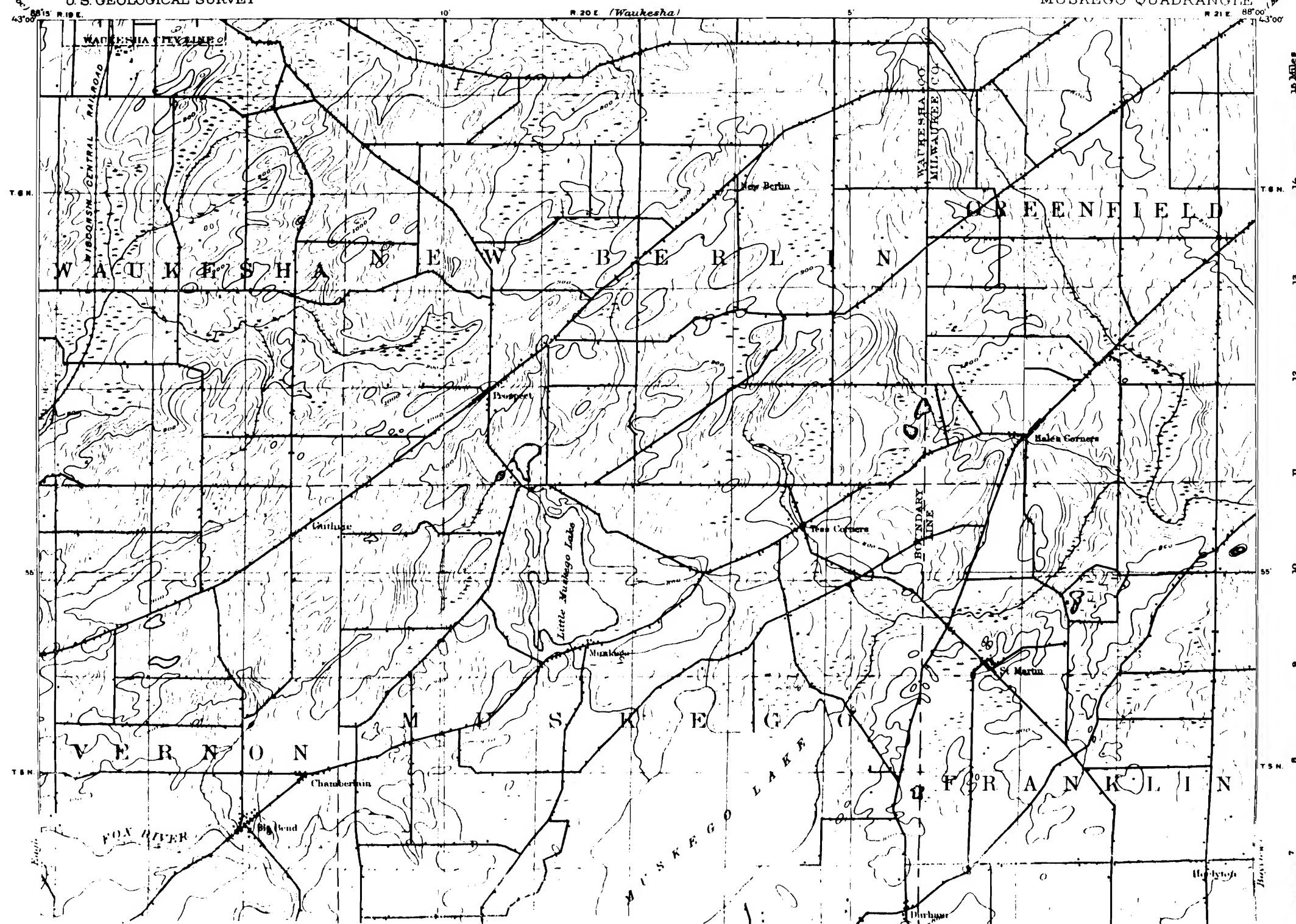
STANDARD SYMBOLS

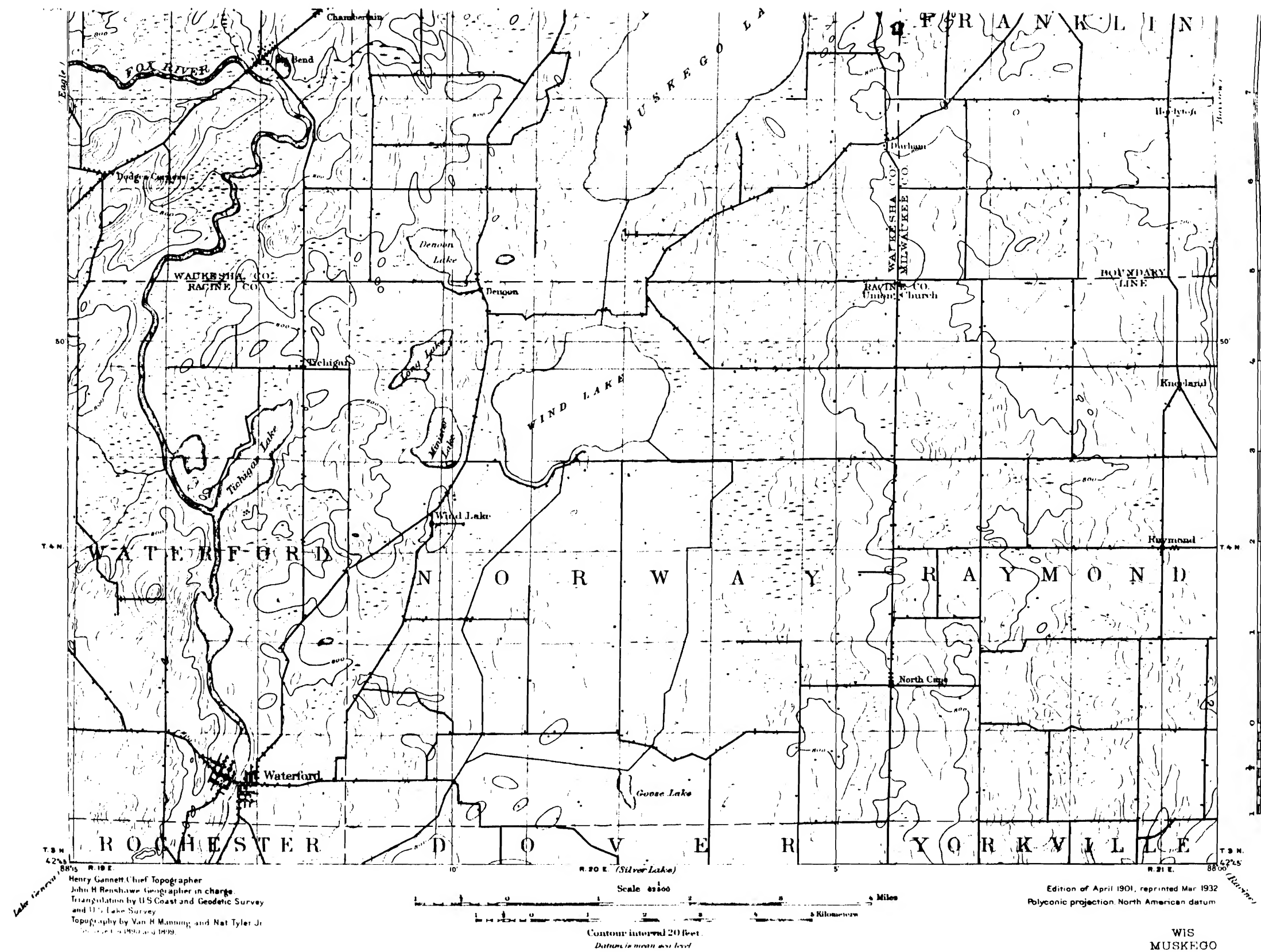
WATER



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
MUSKEGO QUADRANGLE





0

The features shown on this map may, for convenience, be divided into three groups: (1) features in hilly regions, (2) lakes, ponds, and water bodies, and (3) features in agricultural, wooded, and urban areas. The features in the first group are shown in Figure 10. The features in the second group are shown in Figure 11. The features in the third group are shown in Figure 12.

the β phase of the polymer. The β phase is characterized by a low modulus and a high loss modulus. The β phase is the phase of the polymer that is most susceptible to degradation. The β phase is the phase of the polymer that is most susceptible to degradation. The β phase is the phase of the polymer that is most susceptible to degradation.

the \mathcal{H}^1 -norm. The corresponding norm in the space $\mathcal{H}^1(\mathbb{R}^d)$ is denoted by $\|\cdot\|_{\mathcal{H}^1}$. The \mathcal{H}^1 -norm is dominated by the \mathcal{H}^2 -norm, i.e., $\|\cdot\|_{\mathcal{H}^1} \leq \|\cdot\|_{\mathcal{H}^2}$.

longitudes, those on the intermediate scale, 30' of latitude by 30' of longitude; and those on the smallest scale, 1° of latitude by 1° of longitude.

The features shown on this map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers, and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are set out below. Variations appear in some maps of earlier dates.

All water features are shown in blue, the smaller streams and canals in full blue lines, and the larger streams, lakes, and the sea by blue water-tinting. Certain streams, however, which dry during only a part of the year, their beds being dry at other

times, are shown by hachures, or short dashes, on the inside of the curve. The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The heights of many definite points, such as road corners, railroad crossings, railroad stations, summits, water surfaces, triangulation stations, and bench marks, are also given. The figures in each case are placed close to the point to which they apply, and express the elevation to the nearest foot only. The exact elevations of bench marks and

other points are given in the accompanying description of the district, to form a folio of the Geologic Atlas of the United States. The folios are sold at twenty-five cents each, excepting that such as are unusually compact are priced accordingly.

Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by cash—the exact amount—or by post-office money order, and should be addressed to—

THE DIRECTOR,

United States Geological Survey,

Washington, D. C.

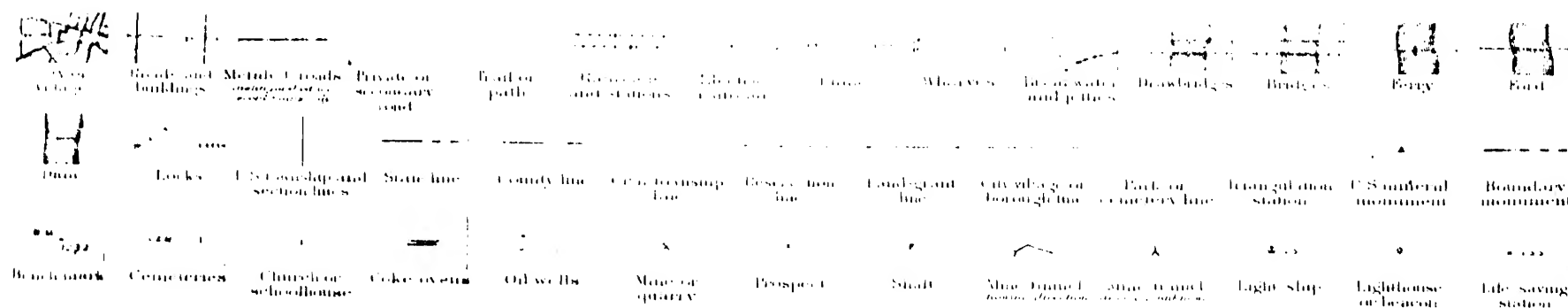
May, 1909

O

CONVENTIONAL SIGNS

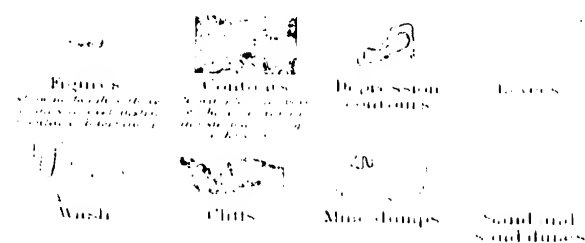
CULTURE

(printed in black)



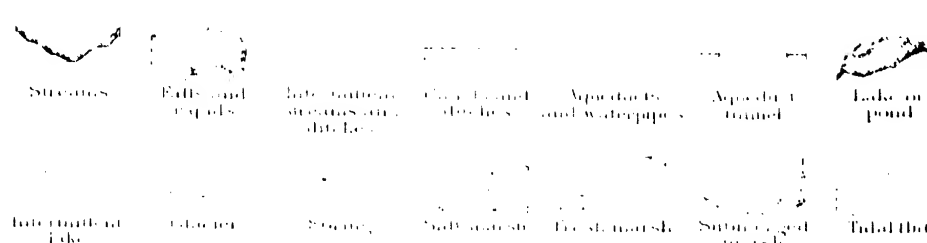
RELIEF

(printed in blue)



WATER

(printed in blue)



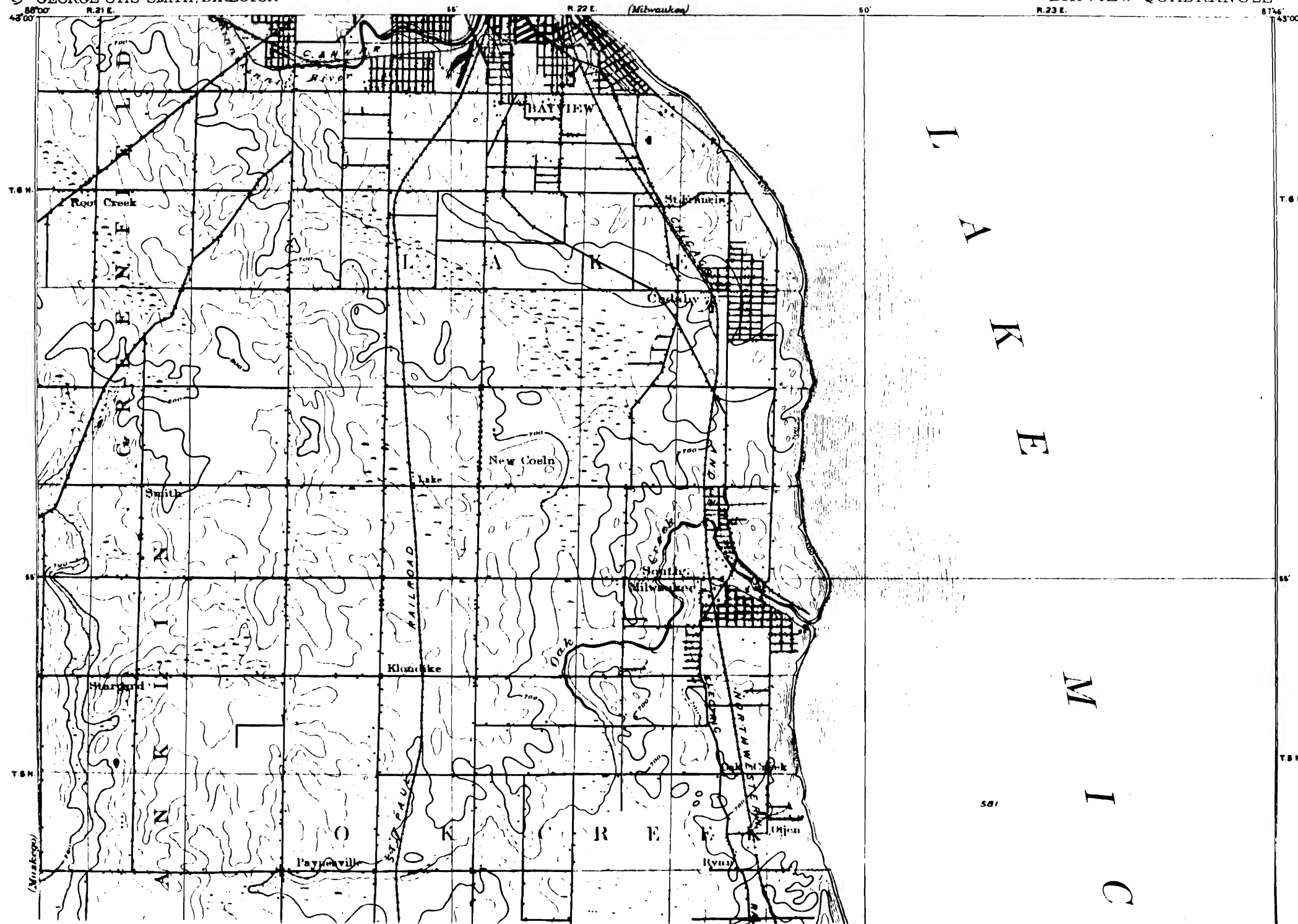
WOODS

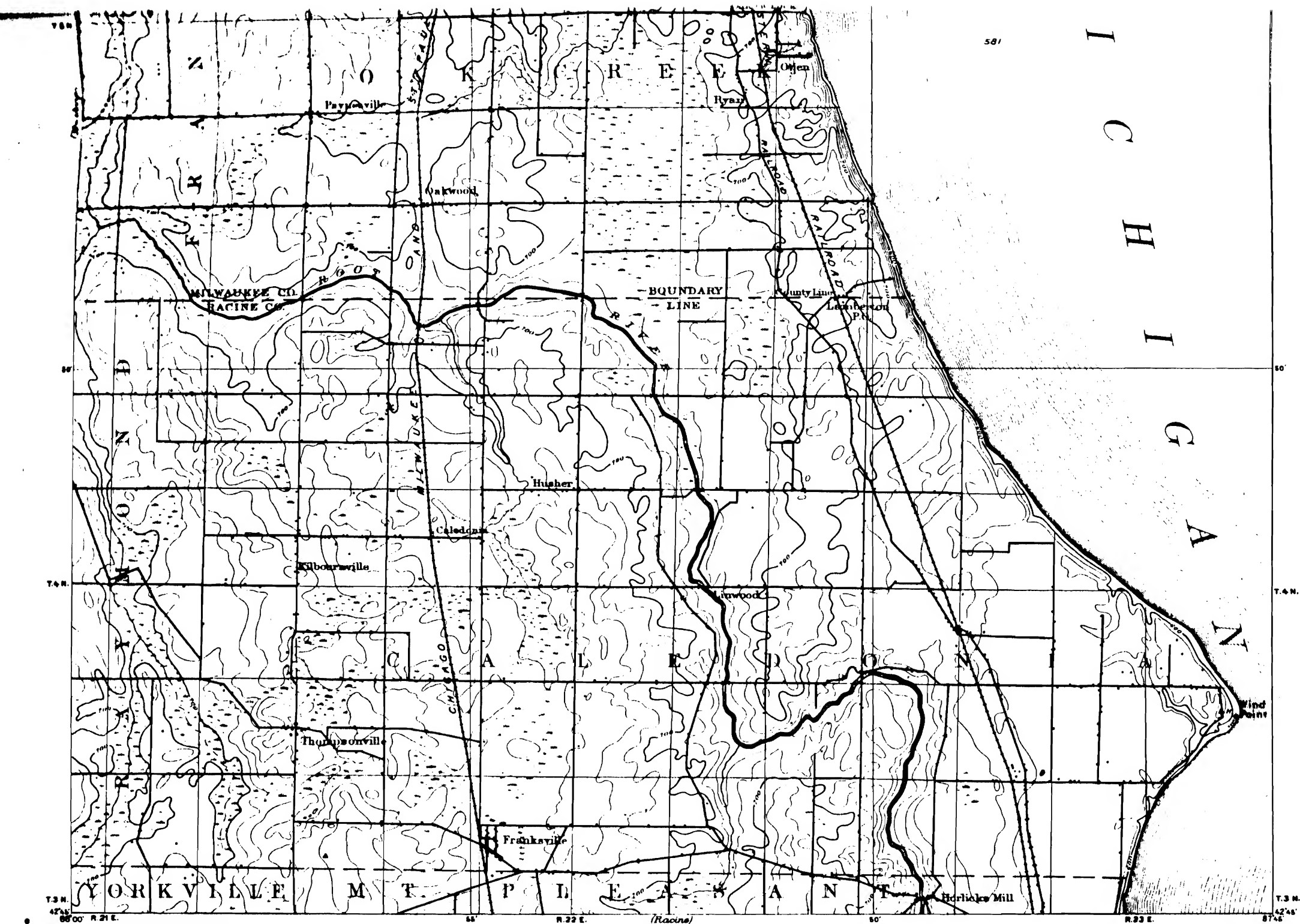
(when shown, printed in green)

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

WISCONSIN
BAYVIEW QUADRANGLE





Henry Gannett, Chief Topographer.
 John H. Renshaw, Geographer in charge.
 Triangulation by U.S. Coast and Geodetic Survey.
 and U.S. Lake Survey.
 Shore line by U.S. Lake Survey.
 Topography by Van H. Manning and Nat. Tyler Jr.
 Surveyed in 1890 and 1899.

Scale 6180
 Contour interval 20 feet.
 Datum is mean sea level.

Edition of Mar. 1901, reprinted Feb. 1910

BAYVIEW

DESCRIPTION OF THE TOPOGRAPHIC MAP OF THE UNITED STATES

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The United States Geological Survey is making a topographic map of the United States. This work has been in progress since 1882, and more than one-third of the area of the country, excluding outlying possessions, has been mapped. The mapped areas are widely scattered, nearly every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This great map is being published in atlas sheets of convenient size, which are bounded by parallels and meridians. The four-cornered division of land corresponding to an atlas sheet is called a *quadrangle*. The sheets are of approximately the same size: the paper dimensions are 20 by 16½ inches; the map occupies about 17½ inches of height and 14½ to 16 inches of width, the latter varying with latitude. Three scales, however, are employed. The largest scale is 1:62500, or very nearly one mile to one inch; i. e., one linear mile on the ground is represented by one linear inch on the map. This scale is used for the thickly settled or industrially important parts of the country. For the greater part of the country an intermediate scale of 1:125000, or about two miles to one inch, is employed. A third and still smaller scale of 1:250000, or about four miles to one inch, has been used in the desert regions of the far West. A few special maps on larger scales are made of limited areas in mining districts. The sheets on the largest scale cover 1½° of latitude by 1½° of longitude; those on the intermediate scale, 30' of latitude by 30' of longitude; and those on the smallest scale, 1° of latitude by 1° of longitude.

The features shown on this map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, etc.; and (3) *works of man*, such as towns, cities, roads, railroads, etc. These are colored and sym-

bolized, are shown, not by full lines, but by lines of dots and dashes. Ponds which are dry during a part of the year are shown by oblique parallel lines. Salt-water marshes are shown by horizontal ruling interspersed with tufts of blue, and fresh-water marshes and swamps by blue tufts with broken horizontal lines.

Relief is shown by contour lines in *brown*. Each contour passes through points which have the same altitude. One who follows a contour on the ground will go neither uphill nor downhill, but on a level. By the use of contours not only are the shapes of the plains, hills, and mountains shown, but also the elevations. The line of the seacoast itself is a contour line, the datum or zero of elevation being mean sea level. The contour line at, say, 20 feet above sea level is the line that would be the seacoast if the sea were to rise or the land to sink 20 feet. Such a line runs back into the valleys and forward around the points of hills and spurs. On a gentle slope this contour line is far from the present coast line, while on a steep slope it is near it. Thus a succession of these contour lines far apart on the map indicates a gentle slope; if close together, a steep slope; and if the contours run together in one line, as if each were vertically under the one above it, they indicate a cliff. In many parts of the country are depressions or hollows with no outlets. The contours of course surround these, just as they surround hills. Those small hollows known as sinks are usually indicated by hachures, or short dashes, on the inside of the curve. The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped: in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. On the contours, usually every fifth one, are marked by figures stating elevation above sea

level. Their descriptions, as well as the descriptions and geodetic coordinates of triangulation stations, are published in the annual reports and bulletins of the Survey. The publications pertaining to specified localities may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as State, county, city, land-grant, reservation, etc., are shown by broken lines of different kinds and weights. Houses are shown by small black squares which in the densely built portions of cities and towns merge into blocks. Roads are shown by fine double lines (full for the better roads, dotted for the inferior ones), trails by single dotted lines, and railroads by full black lines with cross lines. Other cultural features are represented by conventions which are easily understood.

The sheets composing the topographic atlas are designated by the name of a principal town or of some prominent natural feature within the quadrangle and the names of adjoining published sheets are printed on the margins. They are sold at five cents each when fewer than 100 copies are purchased, but when ordered in lots of 100 or more copies, whether of the same or of different sheets, the price is three cents each.

The topographic map is the base on which the facts of geology and the mineral resources of a quadrangle are represented. The topographic and geologic maps of a quadrangle are finally bound together, accompanied by a description of the district, to form a folio of the Geologic Atlas of the United States. The folios are sold at twenty-five cents each, excepting that such as are unusually comprehensive are priced accordingly.

Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by cash, the exact amount, or by post-office money order, and should be addressed to

THE GEOLOGICAL SURVEY
WASHINGTON, D. C.
1904

latitude by 30' of longitude; and those on the smallest scale, 1' of latitude by 1' of longitude.

The features shown on this map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are grouped below. Variations appear in some maps of earlier date.

All water features are shown in *blue*; the smaller streams and canals in full blue lines, and the larger streams, lakes, and the sea by blue water tints. Certain areas, however, which are dry during only a part of the year, their beds being dry at other

times, are shown by hachures, or short dashes, on the inside of the curve. The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The heights of many definite points, such as road corners, railroad crossings, railroad stations, canals, water surfaces, triangulation stations, and bench marks, are also given. The figures in each case are placed close to the point to which they apply, and express the elevation to the nearest foot only. The *spot* elevations of bench marks and

trict, to form a folio of the Geologic Atlas of the United States. The folios are sold at twenty-five cents each, excepting that such as are unusually comprehensive are priced accordingly.

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THE DIRECTOR,

United States Geological Survey,

Washington, D. C.

May, 1909.

CONVENTIONAL SIGNS

CULTEPE (printed in black)

City or village	Roads and paths	Private or secondary road	Trail or path	Railroads and stations	Electric railroad	Tunnel	Wharves	Breakwater and jetties	Drawbridges	Bridges	Ferry	Ford
Dam	Locks	U.S. town-ship and section lines	State line	County line	Civil township line	Reservation line	Land grant line	City village or borough line	Park or cemetery line	Triangulation station	U.S. mineral monument	Boundary monument
Bench mark	Cemeteries	Church or schoolhouse	Coke ovens	Oil wells	Mine or quarry	Prospect	Shaft	Mine tunnel (showing direction & elevation unknown)	Mine tunnel	Light ship	Lighthouse or beacon	Life-saving station

RELIEF (printed in brown)

Depression (when shown, printed in blue)	Contour	Depression contour	Levees
Woods	Cliffs	Tide dunes	Sand and sand dunes

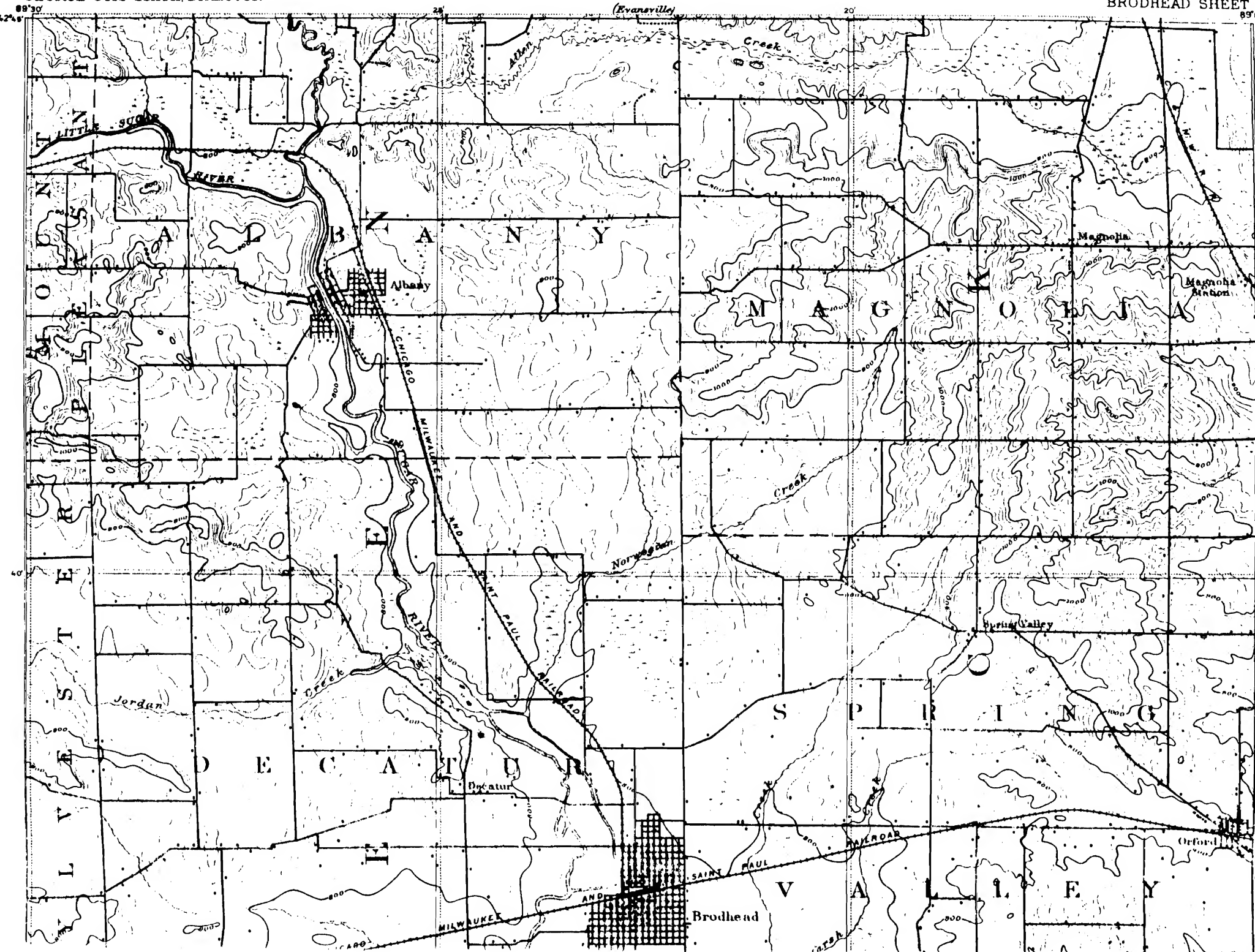
WATER (printed in blue)

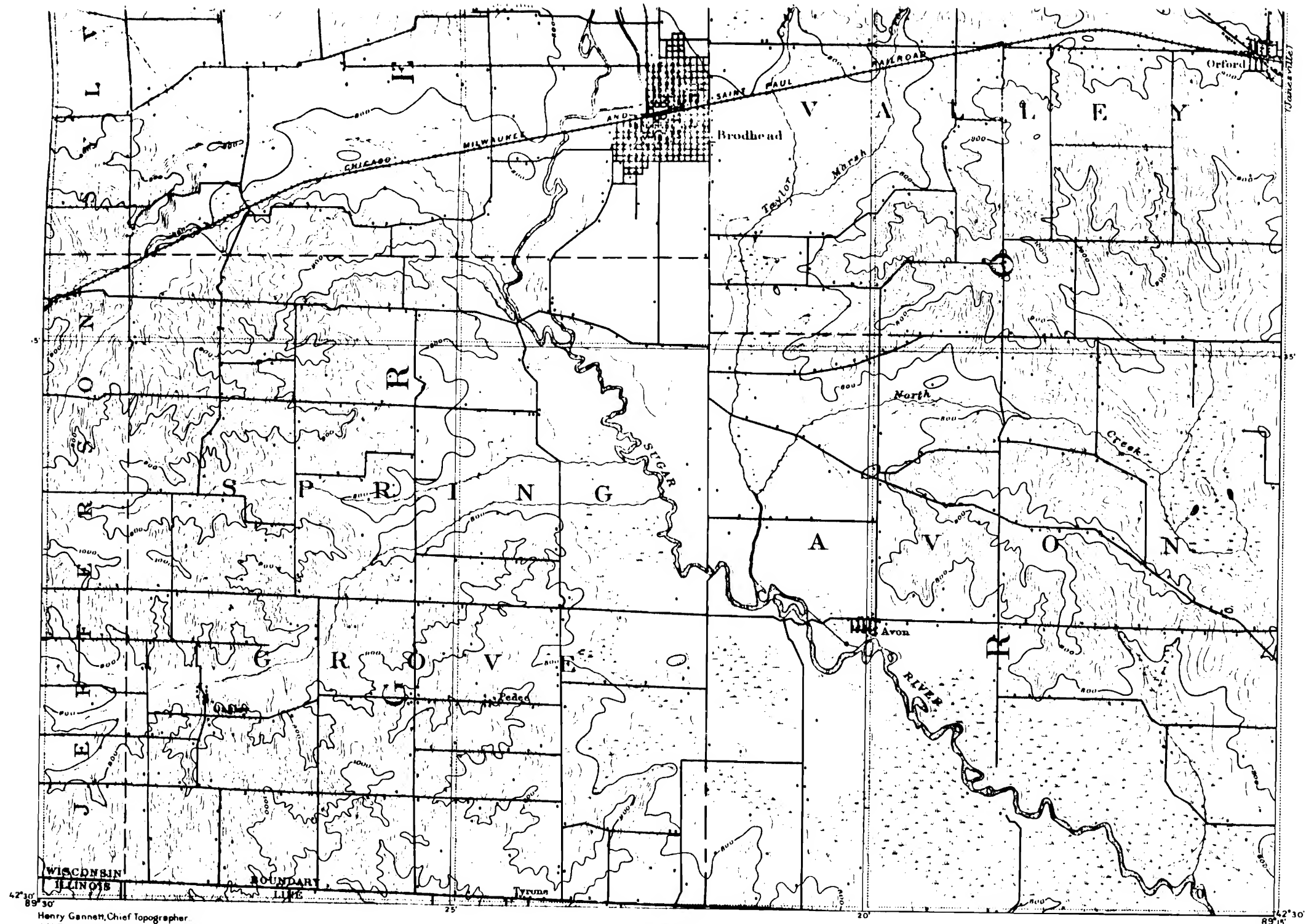
Streams	Falls and rapids	Intermittent streams and ditches	Canals and ditches	Aqueducts and waterways	Aqueduct tunnel	Lake or pond
Intermittent lake	Craters	Spring	Salt marsh	Fresh marsh	Submerged marsh	Tidal flat

WOODS (when shown, printed in green)

08°30'
42°45' 15"

ET 8918 (Straight on)





Henry Gannett, Chief Topographer
 J. H. Renshaw, Geographer in charge
 Triangulation by U. S. Coast and Geodetic Survey
 Topography by Van H. Manning Jr.
 Surveyed in 1891

Scale 1:50,000
 Contour Interval 20 feet.
 Datum is mean sea level.

Dotted lines show corrected position of meridians and parallels.

Edition of Oct 1893 reprinted May 1910.

BRODHEAD

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a topographic atlas of the United States. This work has been in progress since 1902, and has already experienced the benefit of the country's growth. The maps are being made in a new and better way, and the atlas is being published in a new and better way. The atlas is being published in a new and better way.

There are a number of considerations that must be taken into account when selecting a map for use in a particular situation. The first consideration is the purpose of the map. Is it for general reference, or is it for a specific purpose, such as navigation or planning? The second consideration is the scale of the map. A map with a large scale will show more detail than a map with a small scale. The third consideration is the type of map. There are many different types of maps, including topographic maps, road maps, and thematic maps. The fourth consideration is the source of the map. A map from a reputable source will be more accurate than a map from an unknown source. The fifth consideration is the date of the map. A map that is up-to-date will be more useful than a map that is out-of-date. The sixth consideration is the cost of the map. A map that is affordable will be more likely to be used. The seventh consideration is the availability of the map. A map that is easy to find will be more useful than a map that is hard to find. The eighth consideration is the format of the map. A map that is in a convenient format will be more useful than a map that is in an inconvenient format. The ninth consideration is the quality of the map. A map that is well-made will be more useful than a map that is poorly-made. The tenth consideration is the user's preferences. A map that meets the user's preferences will be more useful than a map that does not meet the user's preferences.

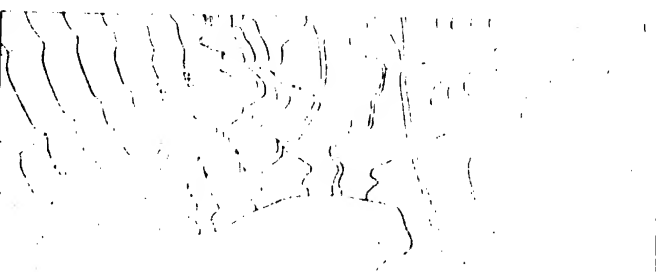
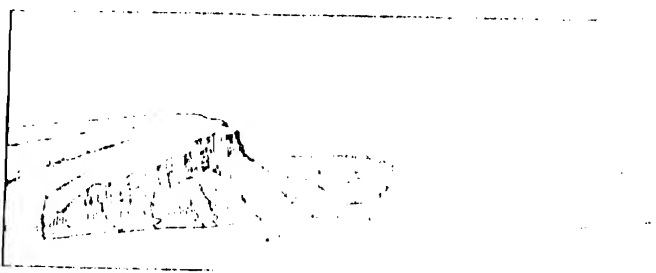
[illegible]

The first of these, the *W. H. C. Bond Fund*, was begun in 1910 and

All water features are printed in *Italics*; the smaller streams and brooks are called *lacs* and the larger streams, lakes, and rivers are called *viendoums*. In rivers and streams, those fishes that come out but three months in the year are called *choum*, and fish and dishes.

Read the following contour lines in *Lesson 1*. A contour on the ground passes through points that have the same altitude. On a map, a contour will go neither uphill nor downhill but remain flat. The contour lines on the map show not only the shape of the hills, mountains, and valleys but also their altitudes. The line of the sea coast itself is a contour line, representing zero of elevation being mean sea level. The contour line, 20 feet above sea level would be the shore line if the sea were to rise or the land to sink 20 feet. On a gentle slope, this contour is far from the present coast; on a steep slope it is near the coast. Where successive contour lines are far apart on the map they indicate a gentle slope; where they are close together they indicate a steep slope; and where they run together in one line they indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



by a sea cliff. The hill on the left terminates abruptly at the valley in a steep scarp. It slopes gradually back away from the scarp and forms an inclined table-land, which is traversed by a few shallow gullies. On the map each of these features is indicated, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures stating elevation above sea level. The heights of many points, such as road corners, summits, surfaces of lakes, and bench marks, are also given on the map in figures, which express the elevations to the nearest foot only. More exact elevations of bench marks, as well as geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey. A bulletin pertaining to any State may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public and through roads are shown by fine double lines; private and poor roads by dashed double lines; trails by dashed single lines.

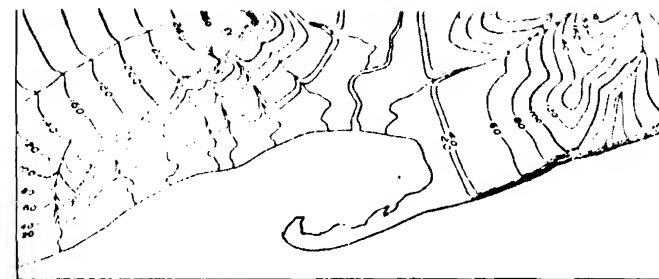
Each quadrangle mapped for the topographic atlas is designated by the name of a principal town or of some prominent natural feature within the quadrangle, and on the margins of the maps are printed the names of adjoining quadrangles for which atlas sheets have been published or are in preparation. The sheets are sold at 10 cents each in lots of less than 50 copies, or at 6 cents each in lots of 50 or more copies, whether of the same or of different sheets.

At the top of the map is the base on which the geology and the geologic time of a quadrangle are represented, the maps forming these units being bound together, with a description of the quadrangle, to form a folio of the *Geologic Atlas of the United States*. Circular, showing by index maps the published topographic, hydrographic and geologic folios, receive

of the surveyed area have been published on a scale of 1:250,000, or about 4 miles to an inch. These maps are large, each representing 2° of latitude by 4° of longitude. A few areas that are of economic importance, aggregating about 3,000 square miles, have been surveyed in greater detail and mapped on a scale of 1:62,500, or about a mile to an inch.

A survey of the Hawaiian Islands was begun in 1910 and the resulting maps are being published on a scale of 1:62,500.

The features shown on these atlas sheets or maps may be classed in three groups—(1) *water*, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) *relief*, including mountains, hills, valleys, and other elevations and depressions; (3) *culture* (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used for these features are shown below, with explanations. Variations appear on some earlier maps.



The sketch represents a river valley between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked end bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends.

of the same or of different sheets.

The topographic map is the base on which the geology and the mineral resources of a quadrangle are represented, the maps showing these features being bound together, with a description of the quadrangle, to form a folio of the Geologic Atlas of the United States. Circulars showing by index maps the published topographic atlas sheets and geologic folios covering any State or region will be sent free on application.

Applications for maps or folios should be accompanied by cash—the exact amount—or by post-office money order and should be addressed to—

THE DIRECTOR,

United States Geological Survey,

Washington, D. C.

January, 1913.

CONVENTIONAL SIGNS

CULTURE (printed in black)

City or village	Roads and buildings	Metalled road (shown on recent maps only)	Private or secondary road	Trail or path	Railroads	Electric railroad	Tunnel	Wharves	Breakwater and jetties	Bridges	Drawbridges	Ferry (point up stream)	Ford
Dam	Canal lock (point up stream)	U.S. township and section lines and located corners	State line	County line	Civil township or district line	Reservation line	Land grant line	City village or borough line	Small park or cemetery line	Triangulation or primary traverse monument	U.S. mineral monument	Boundary monument	
Beach mark (shows low water mark; shown by brown lines and black figures without lettering)	Cemeteries	Church, school, coke ovens (shown on recent maps)	Oil wells	Mine or quarry	Prospect	Shaft	Mine tunnel (showing direction if direction unknown)	Mine tunnel	Light ship	Lighthouse or beacon	File-saving station		

RELIEF (printed in brown)

Contours (showing high water (shown by blue lines) and low water (shown by brown lines) and spot heights of the surface)	Contours	Depression contour	Levee
Wash	Cliffs	Mine dumps	Sand and sand dunes

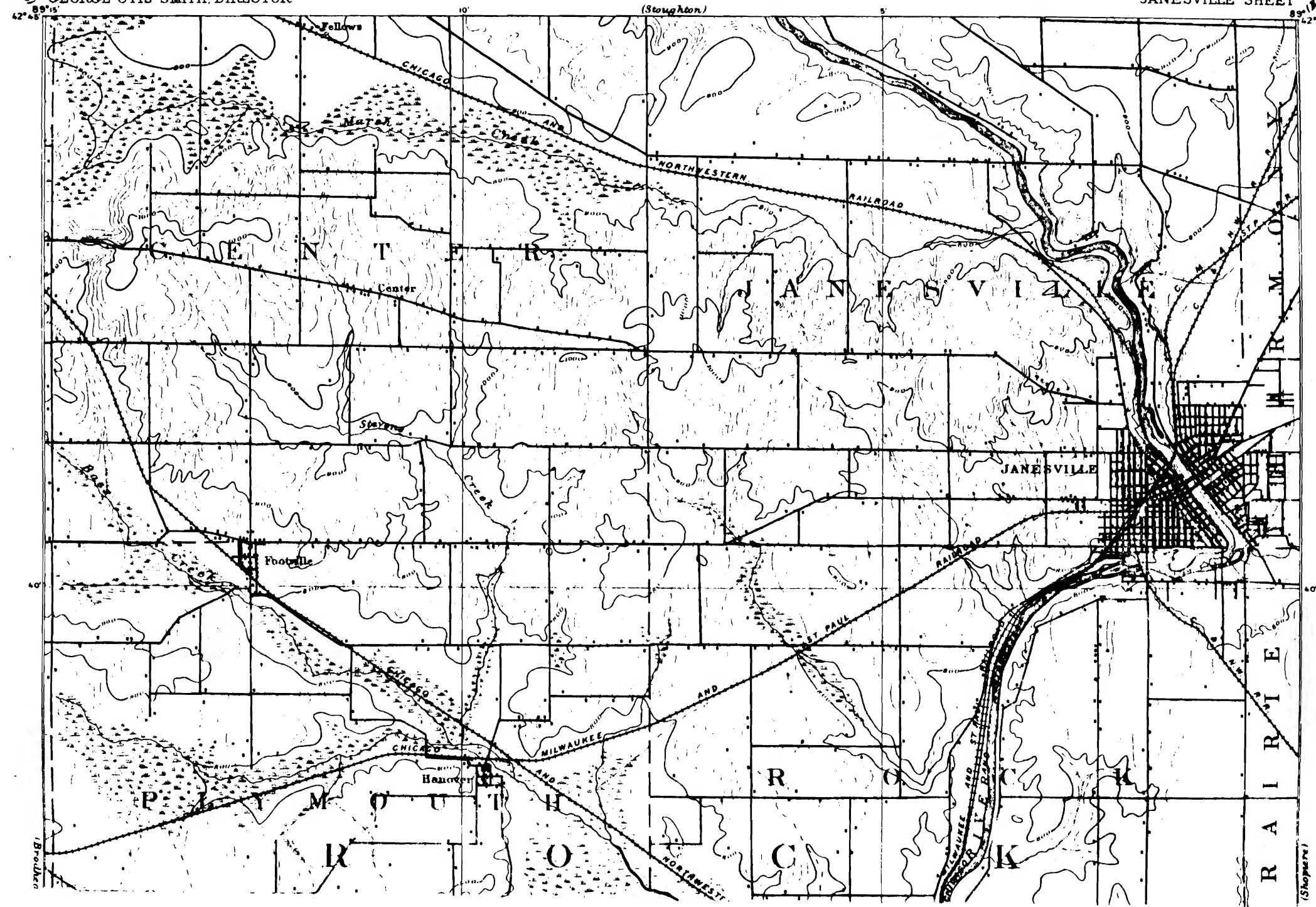
WATER (printed in blue)

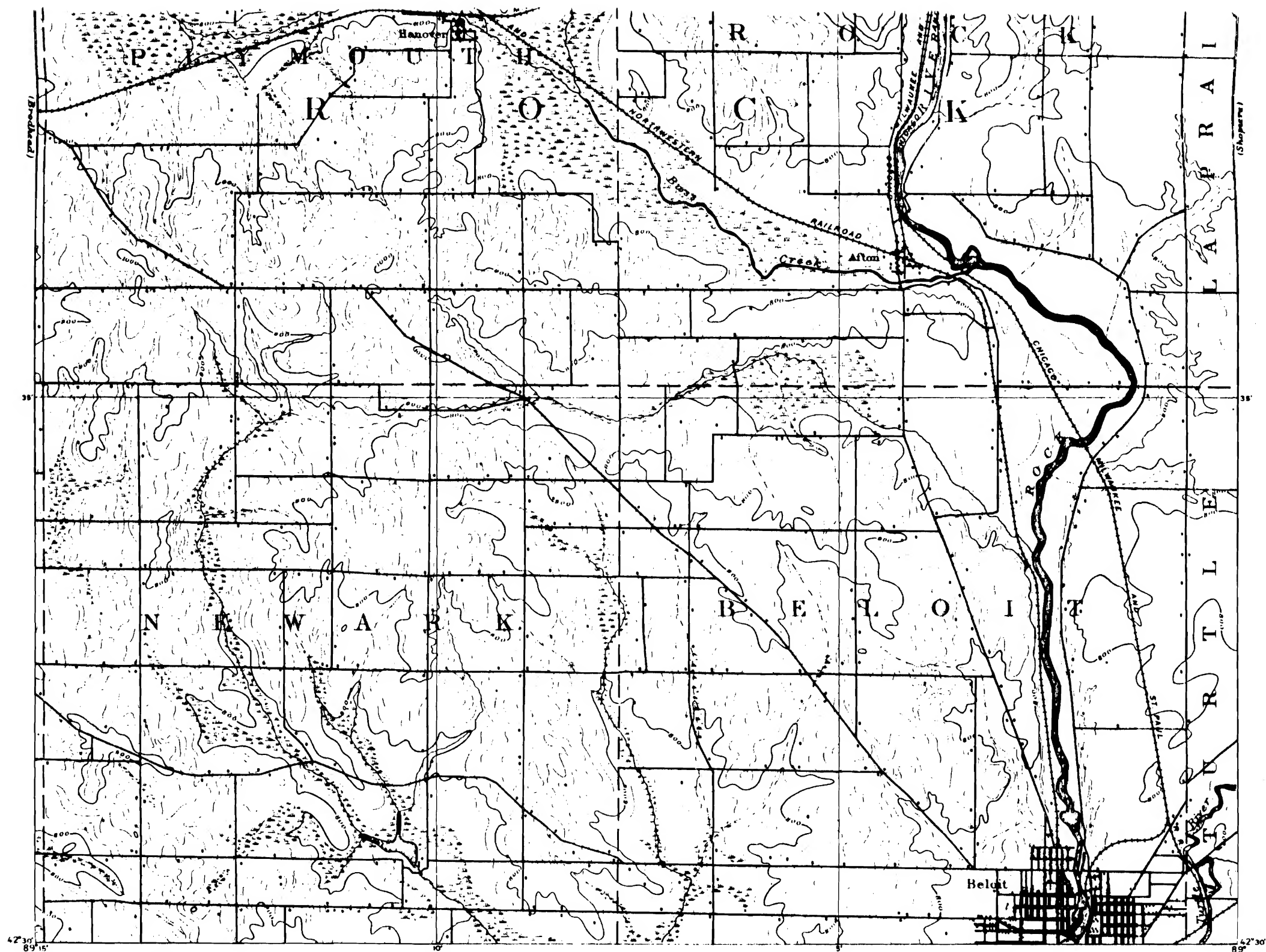
Streams	Falls and rapids	Intermittent streams and ditches	Canals or ditches	Aqueducts or waterpipes	Aqueduct tunnel	Lake or pond	Unsurveyed streams and abandoned canals
Intermittent lake	Glacier (Or shown by contours printed in blue)	Spring	Salt marsh	Fresh marsh	Grassy pond	Tidal flat	

WOODS (when shown, printed in green)

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WISCONSIN
JANESVILLE SHEET





Henry Gannett, Chief Topographer
 J. H. Kershaw, Geographer in charge
 Triangulation by U. S. Coast and Geodetic Survey
 Topography by Van H. Manning Jr.

Scale 62,500
 Contour Interval 20 feet

Edition of Sept. 1893, reprinted Oct. 1913.

JANESVILLE

1:250,000 (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{500,000}$, but about 4,000 square miles have been mapped on a scale of $\frac{1}{250,000}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{250,000}$.

The features shown on these maps may be arranged in three groups: (1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture,



The features shown on these maps may be arranged in three groups: (1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture,

including cities, towns, villages, and other human-made features. The maps are published on a scale of $\frac{1}{250,000}$ or larger.

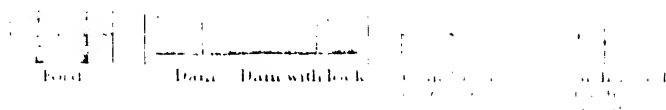
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THE DIRECTOR,

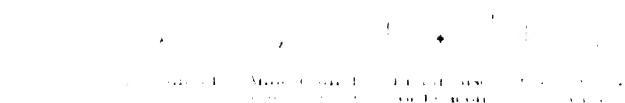
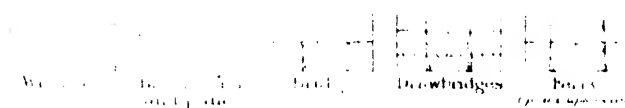
United States Geological Survey,

Washington, D. C.

September, 1908.



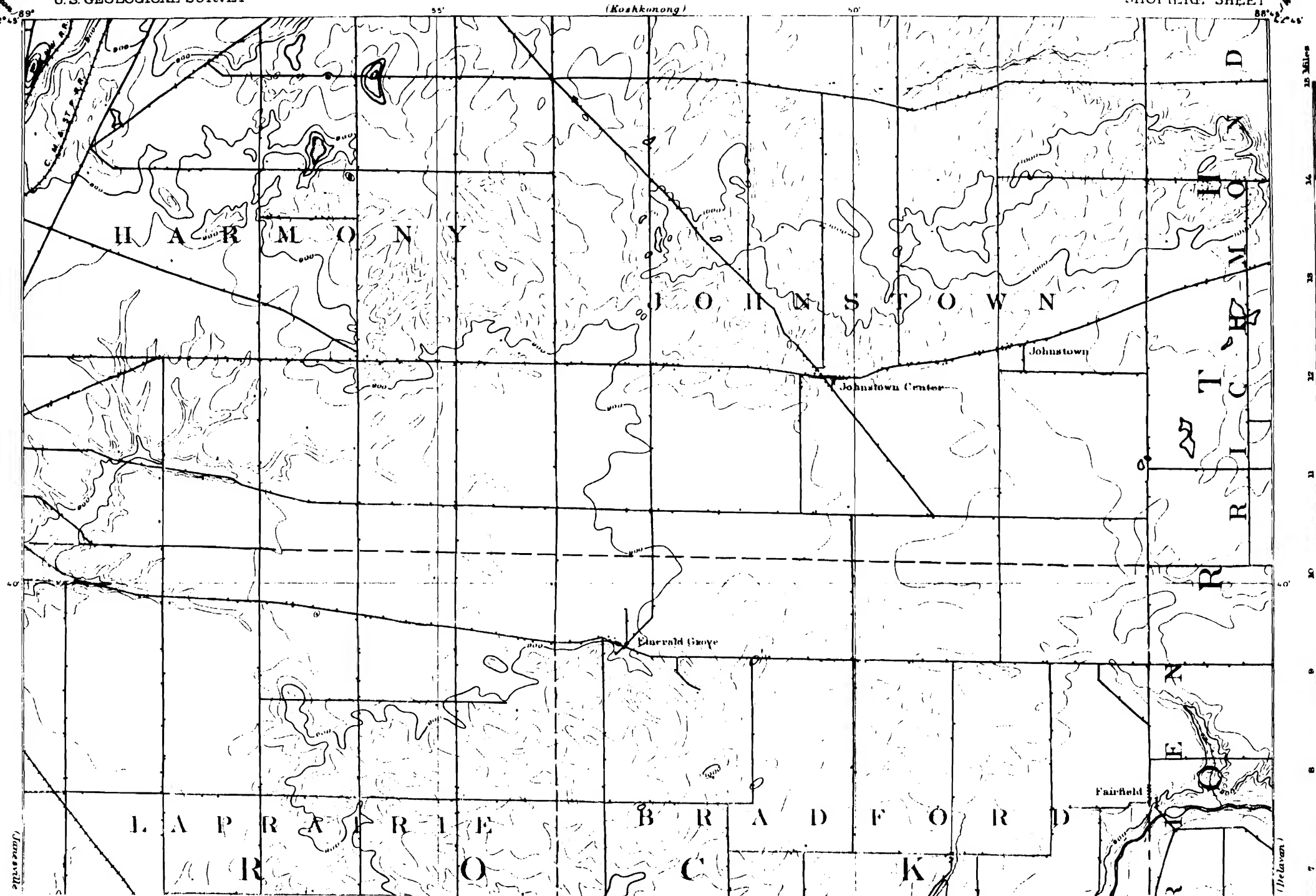
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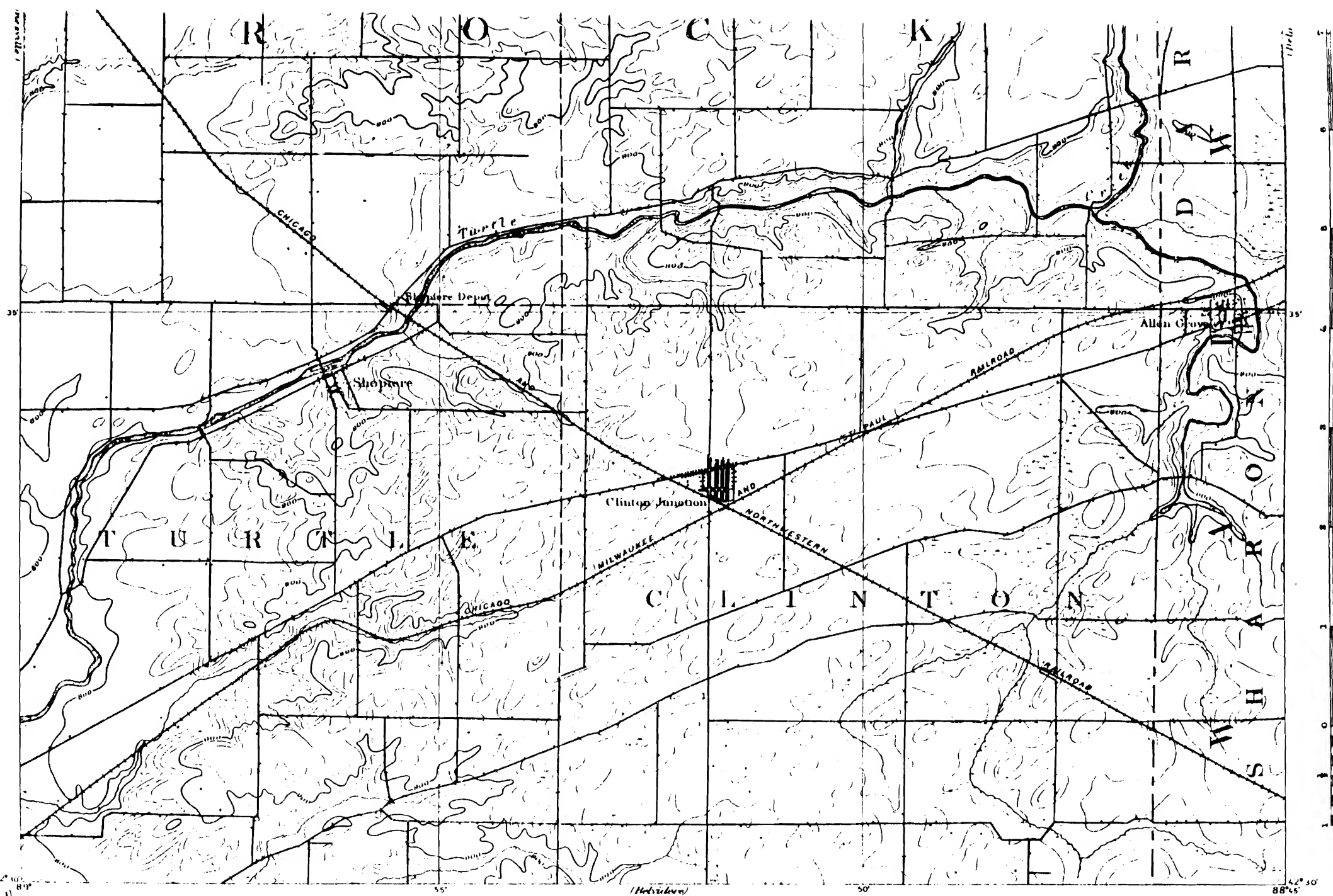


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DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
SHOPIERE SHEET





Henry Gannett Chief Topographer
 F. H. Benson Geographer in charge
 Topography by Van H. Manning, Jr.
 Published in 1891

Scale 1:42,500
 Contour Interval 20 feet
 (Helix)

Edition of Sept. 1893, reprinted 1933.
 Polyconic projection

WIS.
 SHOPIERE

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard map size is nearly uniform, the sheets represent areas of different size. On the lower margin of each map are printed graphic scales showing distance in feet, meter, and mile. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurement on the map and corresponding distance on the ground. For example, the scale $1:62,500$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

When some areas are surveyed and some maps are completed and published on special scales for special purposes, the standard topographic surveys for the United States proper and its outlying maps have for many years been divided into three groups, differentiated as follows:

1. Survey of areas in which there are problems of great scientific importance, relating, for example, to mineral development, irrigation, or reclamation of swamp areas—made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one-half mile, with a contour interval of 10 to 20 feet.

2. Survey of areas in which there are problems of average scientific importance, such as most of the basin of the Mississippi River—made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = one mile, with a contour interval of 10 to 20 feet.

3. Survey of areas in which the problems are of minor public importance, such as much of the mountainous western United States, or Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of 1 inch = nearly 2 miles, with a contour interval of 20 to 100 feet.

The topographic survey of Alaska has been completed.

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Inter-mittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contour at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravine. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep escarpment from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped; in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 200 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Good motor or public roads are shown by fine double lines, poor motor or private roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

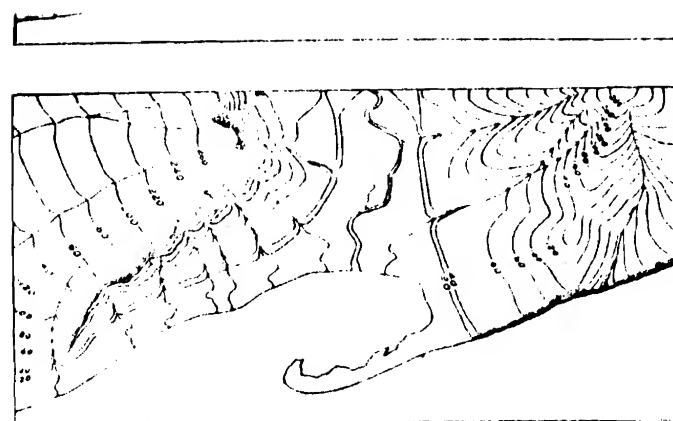
Index maps of each State and of Alaska and Hawaii, showing the area covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch \approx nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles have been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of 1:50,000.

The features shown on these maps may be arranged in three groups - (1) water, including seas, lake, rivers, canals, swamps, and other bodies of water; (2) relief, including mountain, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping

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Index maps of each State and of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 10 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,

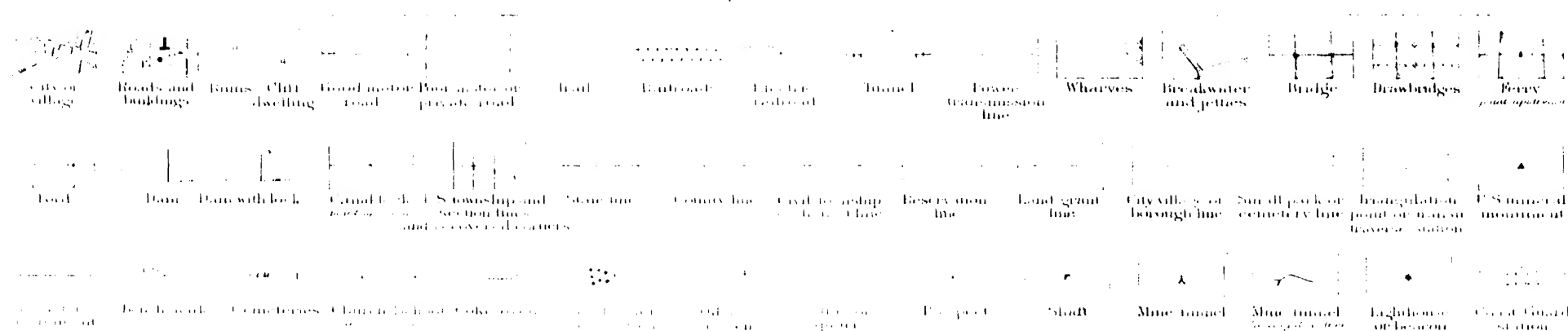
United States Geological Survey,

Washington, D. C.

September, 1928.

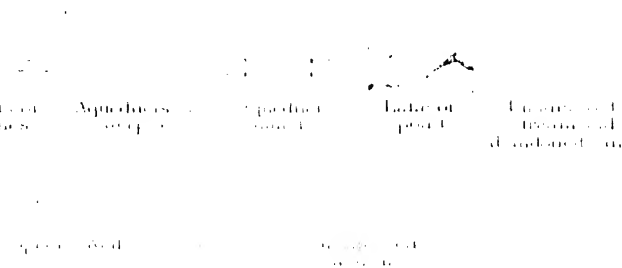
STANDARD SYMBOLS

CUH 11168
upright in black.



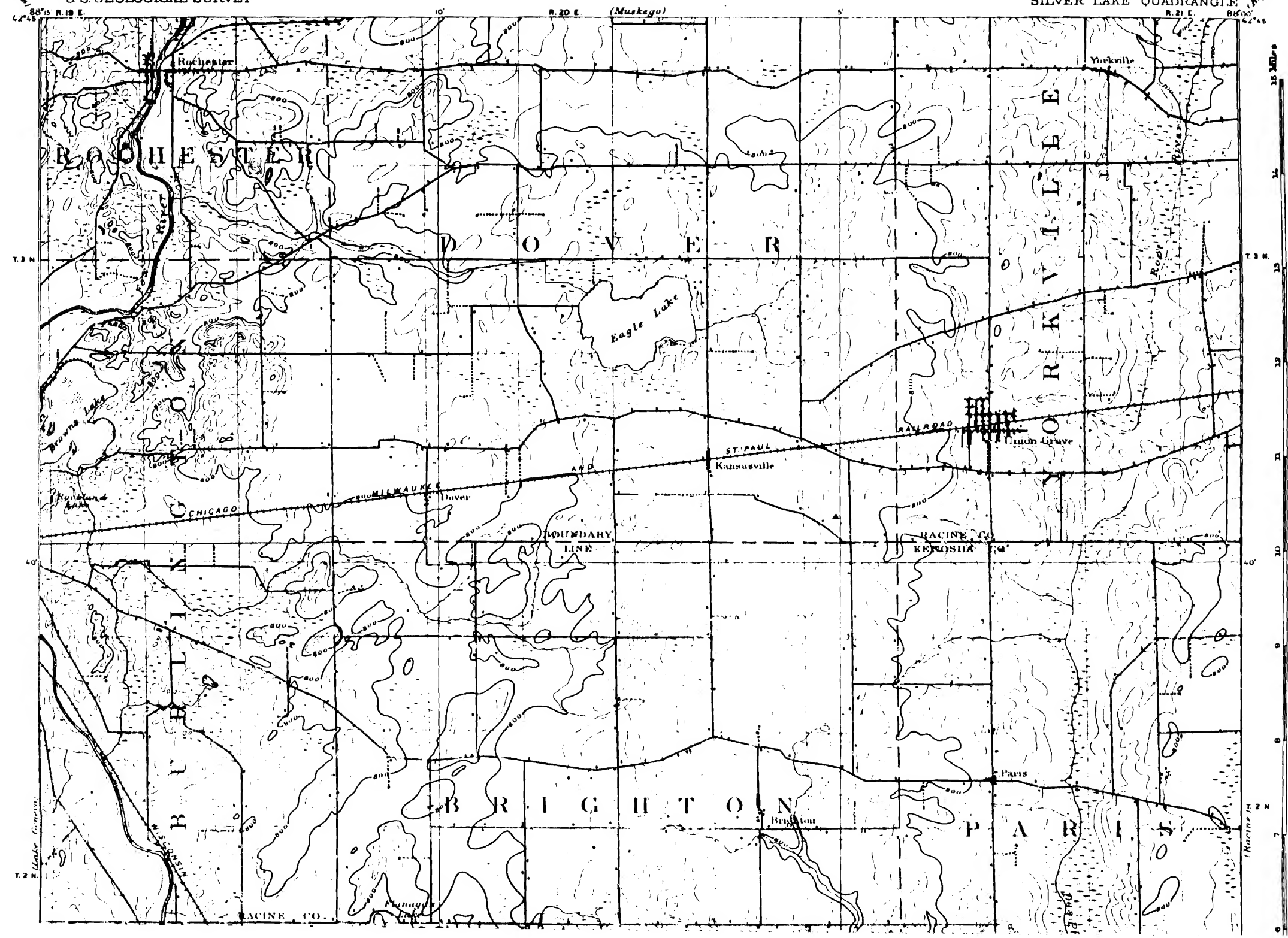
1971-1972

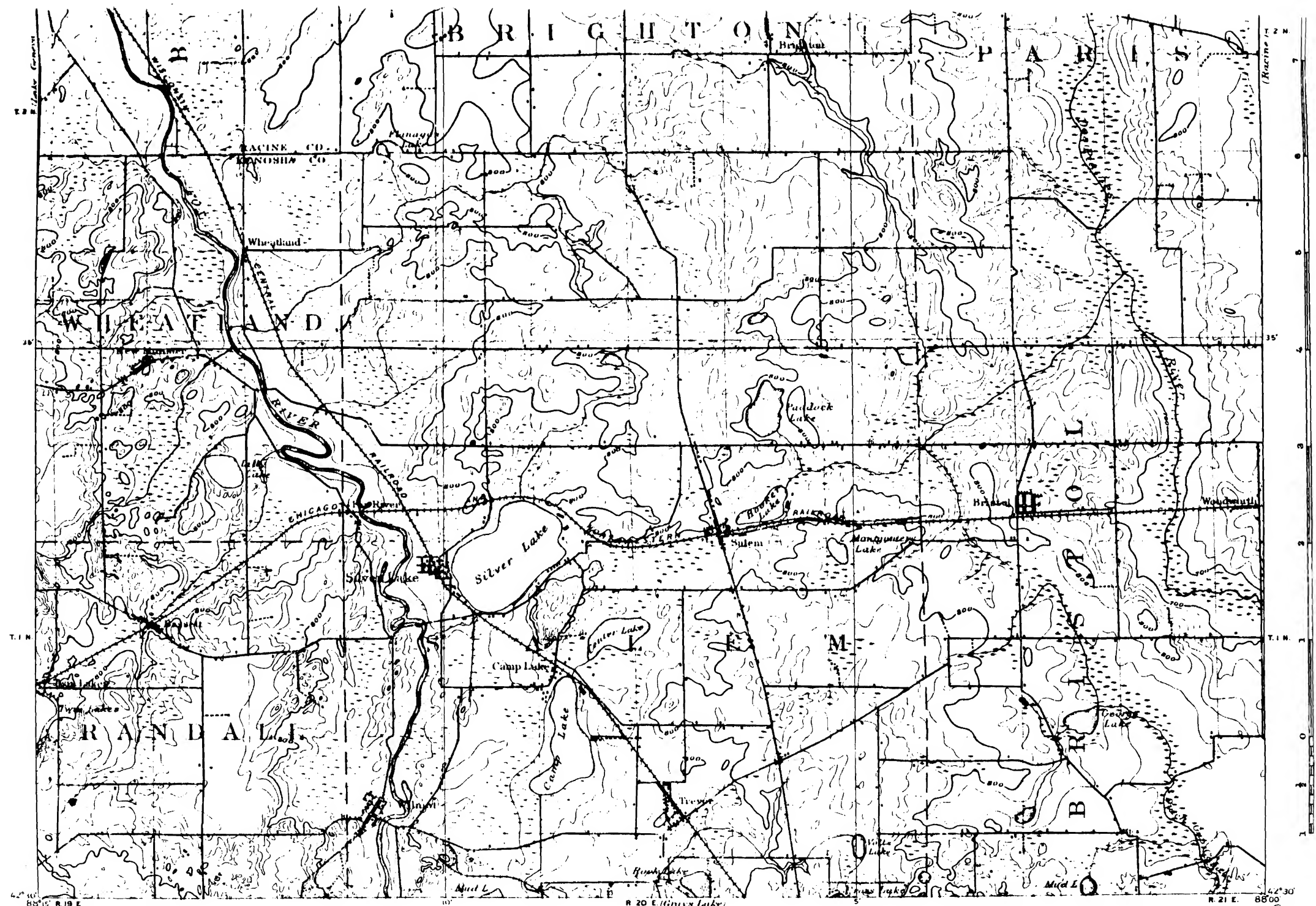
WATER
printed in blue



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
SILVER LAKE QUADRANGLE





Henry Gannett, Chief Topographer
 H. B. Rosshaw, Geographer in Charge
 Triangulation by U. S. Coast and Geodetic Survey
 Topography by Van H. Manning, Jr.
 Surveyed in 1891
 Revised in 1906 under direction of H. H. Wilson, Geographer
 Robert M. Brown in charge of section by L. Scott Smith

APPROXIMATE MEAN
 DECADEATION 1900

Scale 62500
 1 inch = 1 mile
 1 centimeter = 100 meters
 Contour interval 20 feet.
 Datum is mean sea level.

DIAGRAM OF TOWNSHIP

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40

Edition of June 1906, reprinted 1932
 Polyconic projection, North American datum

SILVER LAKE, WIS.

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of our foreign possessions.

This topographic atlas is published in the form of map or outline sheets measuring about 60 by 20 inches. Under the general plan adopted the country is divided into portions bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale chosen for any quadrangle depending on its nature and its predominant features, development, and so on; especially though the standard sheet meets more or less uniform, say they represent areas of different sizes, on the lower margin of each sheet the principal geographic features showing distance in feet, meters, and miles. In addition, the scale of the map is shown by a representative fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $1/100,000$ means that 1 unit on the map represents 1 linear foot, or 1 meter, or even 100,000 units of length on the earth's surface.

and the grid order used on the maps are multiple of 100,000 (e.g., 100,000). Quadrangles in thickly settled or industrial areas that do not have a map on a scale of 1:250,000 or smaller are marked as such, and cover areas measuring 10 in. or more on each side. Quadrangles in less thickly settled or rural areas are marked as such. The important details are maps which are 10 in. or more on each side, and cover areas measuring 10 in. or more on each side. Recommended maps of sparsely settled regions may be in order to provide information on the coverage areas surrounding a particular area of interest for special purposes (e.g., for a study area).

the following theorem, which states that the top representation of the algebra is the only one that has no nontrivial subrepresentations. The proof of this theorem is given in Section 4. The theorem is a special case of a more general result, which states that the top representation of the algebra is the only one that has no nontrivial subrepresentations. The proof of this theorem is given in Section 4. The theorem is a special case of a more general result, which states that the top representation of the algebra is the only one that has no nontrivial subrepresentations. The proof of this theorem is given in Section 4.

[illegible]

All the water features are represented in color. The smaller streams and creeks by single blue lines and the larger ones, the lakes, and the sea by blue water filling of the map. The numerous swamps—those whose beds are dry or have part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines. In general, the closer the line represents an imaginary line on the ground, or elevation, the steeper the slope of which is in the same general slope. The closer the line could be drawn at any altitude, but no deeper, is the steeper the slope. A contour line is a line of equal elevation. The line of the contour is the same as the contour line, or the line of the same elevation. The line of the contour is the same as the contour line, or the line of the same elevation. For example, would be the contour line if the contour line were the same. Contour lines show the shape of the hills, mountains, and valleys, and the steepness of the slopes. Successive contour lines that are close together on the map indicate a steep slope; lines that are far together indicate a gentle slope.

The manner in which concrete cases express attitude, form, and grade is shown in the figure below.

1. *Leptocarpus* *perobolus* (H. B. K.) J. R. Woot.

gradually away and forms an inclined table-land that is traversed by a low shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is noted at the bottom of each map. This interval varies according to the topography of the area mapped; at low elevations it may be as small as 1 foot; in a rough or hilly country it may be as great as 200 feet. Certain contour lines, such as the fifth or sixth, are, at a male heavier than the others, and are accompanied by figures showing altitude. The locations of many points—such as road corners, summits, or places of local interest—marked by bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—are published in bulletins that are issued first by the Geological Survey.

The letters and works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metalled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of the principal city, town, or natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 2,500 quadrangles in the United States have been surveyed, and maps of them distributed; and on the other side of our sheet have been

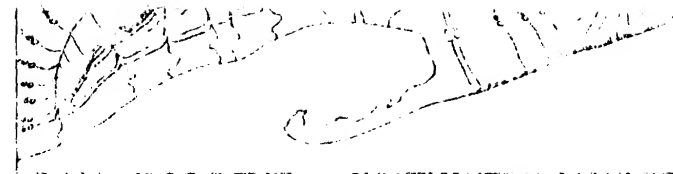
The first part of the map is the base on which the geology and geomorphology and hydrography are represented, and the second part contains the names of land features and a descriptive account of the climate of the territory and of the political divisions.

The following information applies to the topographic maps available from the Geological Survey of Canada:
Topographic maps can be ordered at the following prices: 1) One or two maps can be ordered at the time each, or all four or all more; 2) One map can be ordered in quantities of 6 cents each, but if quantities are added for 20 cents or more each, the price per map will be reduced to the following: A circular describing the new edition is included.

most maps on a scale of $\frac{1}{250,000}$ inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$ but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp from which it slopes

geologic folio published by the United States Geological Survey may be obtained free. Copies of the topographic maps may be obtained for 10 cents each, or in lots of 50 or more, either of the same or of different quadrangles, for 6 cents each. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

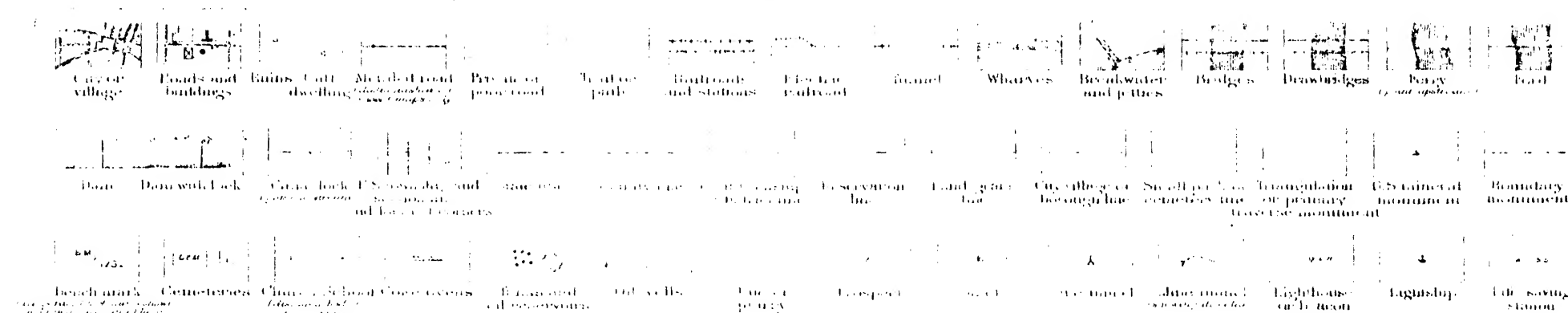
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

November, 1919.

CONVENTIONAL SIGNS

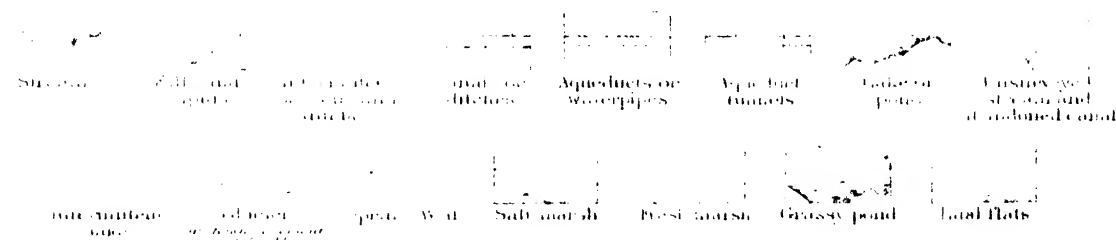
CULTURE (printed in black)



RELIEF (printed in brown)



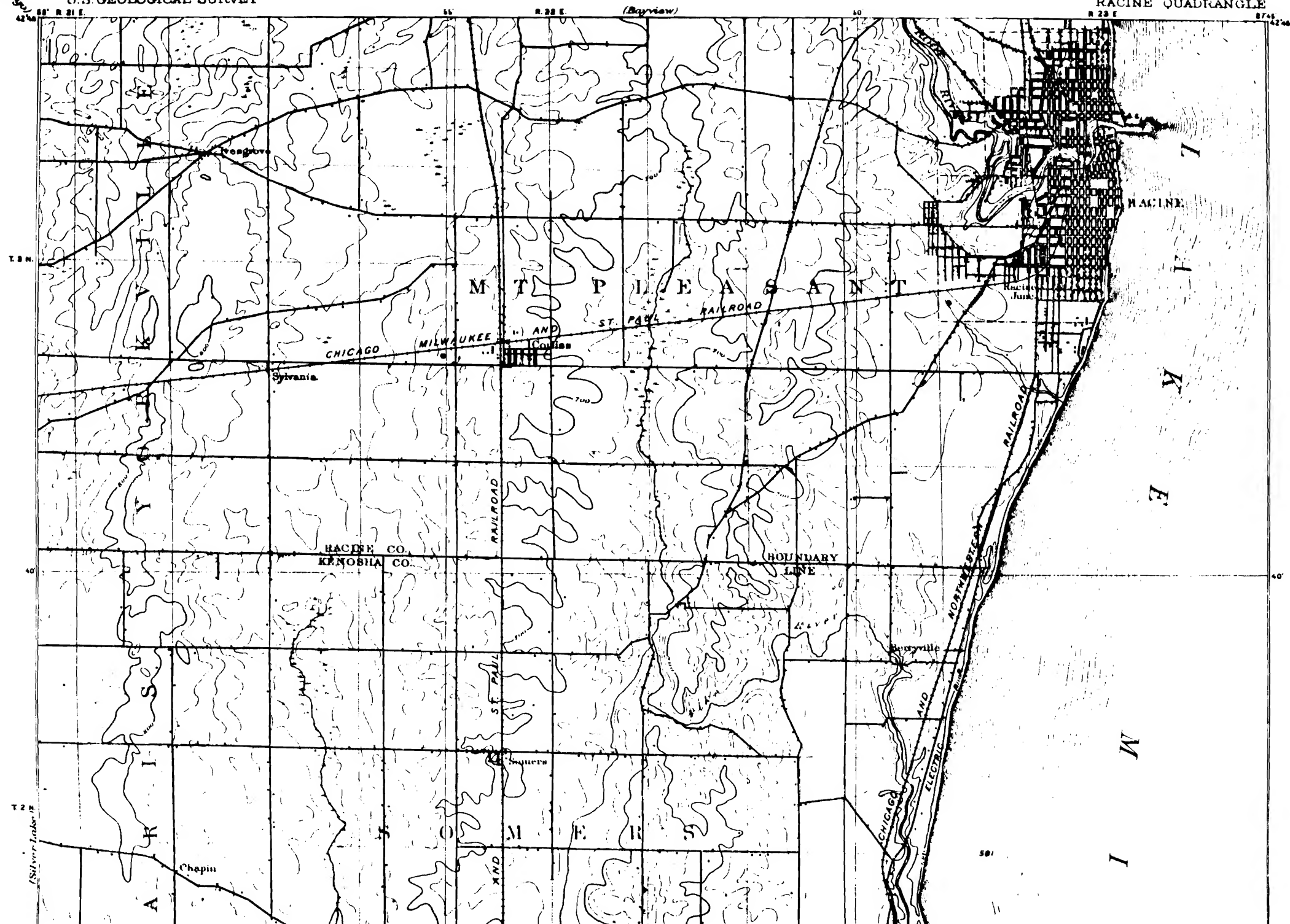
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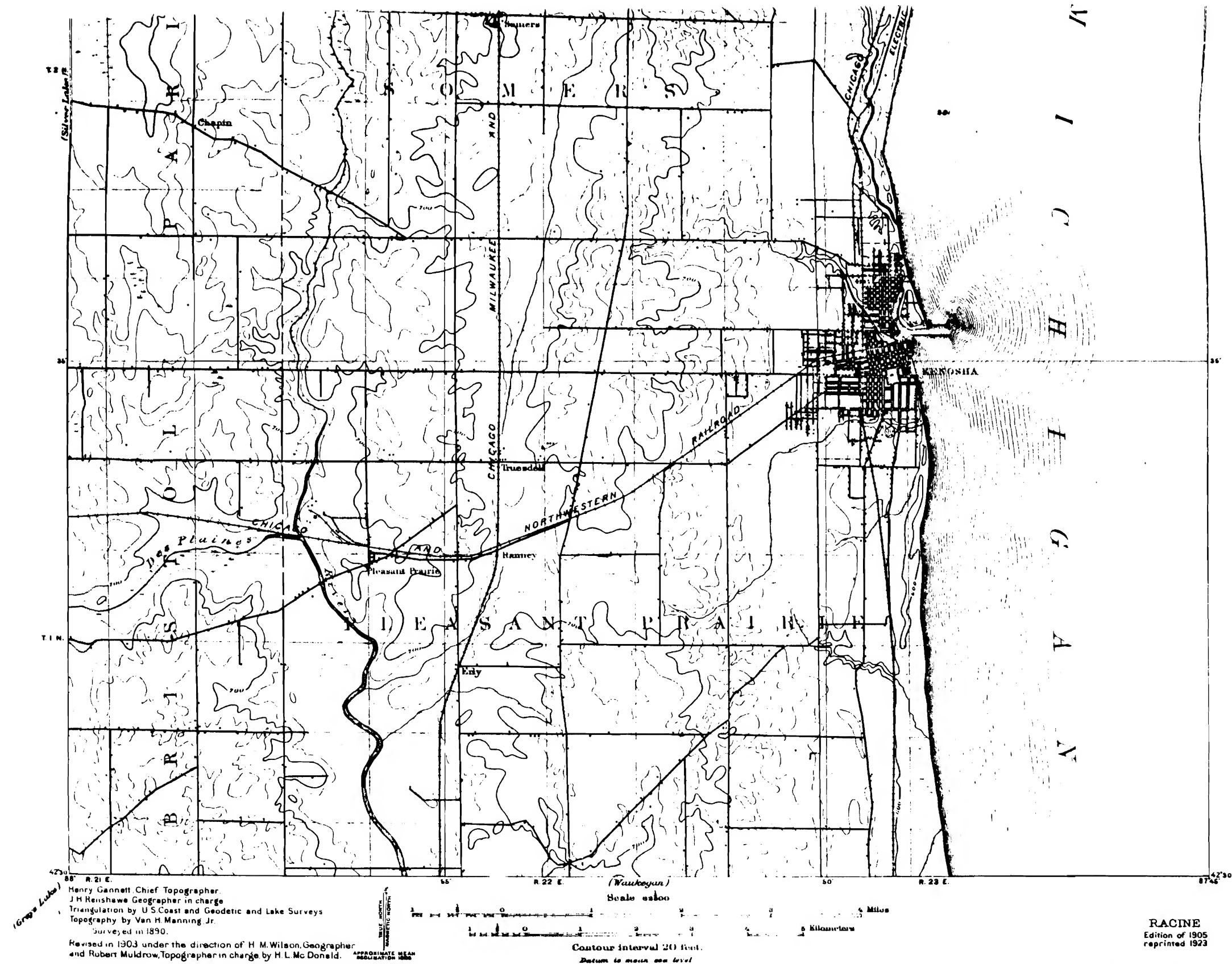


WORDS (when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WISCONSIN
RACINE QUADRANGLE





Henry Gannett, Chief Topographer.
J. H. Renshaw, Geographer in charge.
Triangulation by U. S. Coast and Geodetic and Lake Surveys.
Topography by Van H. Manning, Jr.
Surveyed in 1890.
Revised in 1903 under the direction of H. M. Wilson, Geographer,
and Robert Muldrow, Topographer in charge by H. L. McDonald.
APPROXIMATE MEAN
MAGNETIC NORTH
REGULATION 1905

RACINE
Edition of 1905
reprinted 1923

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 40 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch=one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch=nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{250,000}$ (1 inch=nearly 2 miles), with a contour interval of 25 to 100 feet.

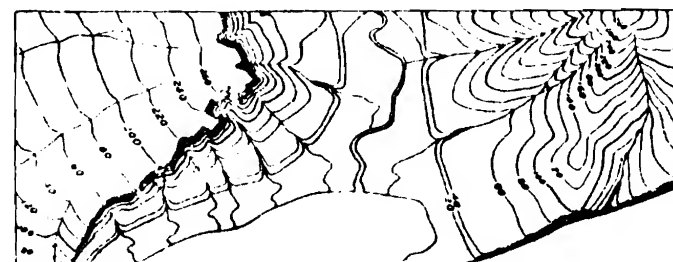
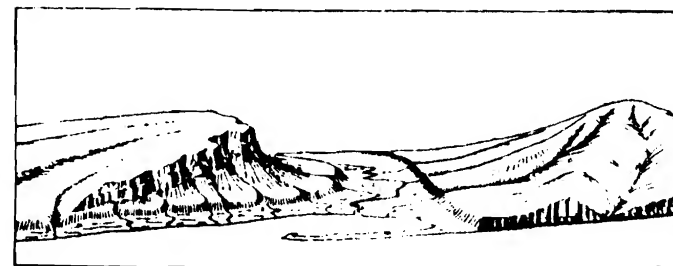
A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has

boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table-land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Metaled roads are shown by double lines, one of which is accentuated. Other public roads are shown by fine double lines, private and poor roads by dashed double lines, trails by dashed single lines.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,000 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 200 folios have been published.

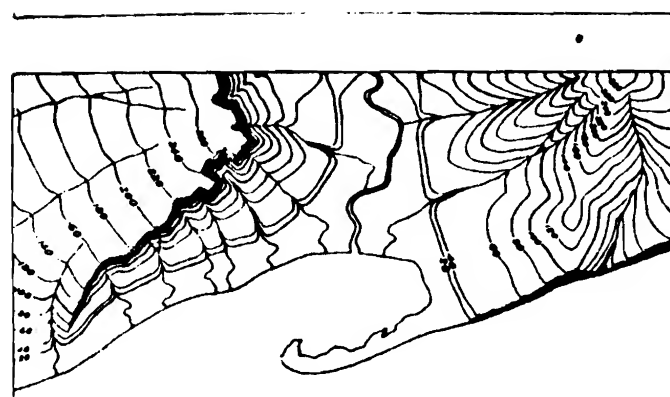
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A discount of 40 per cent is allowed on an order for folios amounting to \$5 or more at the retail price.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{250,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 37 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{250,000}$ or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$.

About half of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and



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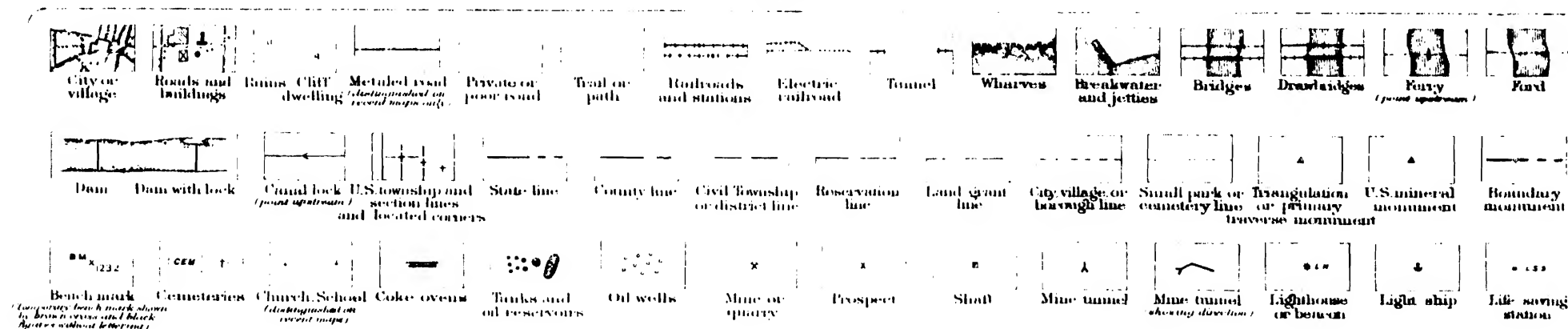
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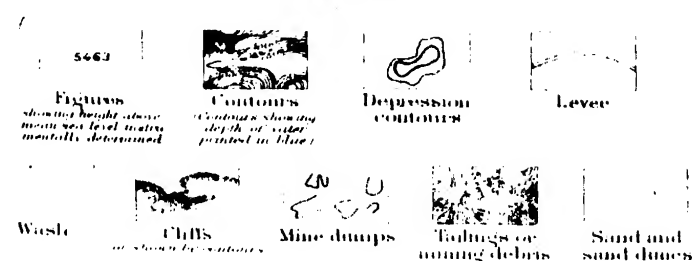
January, 1924.

CONVENTIONAL SIGNS

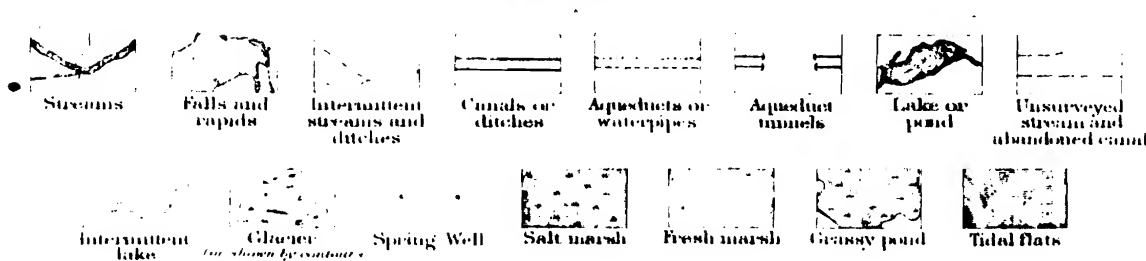
CULTURE (printed in black)



RELIEF (printed in brown)



WATER (printed in blue)

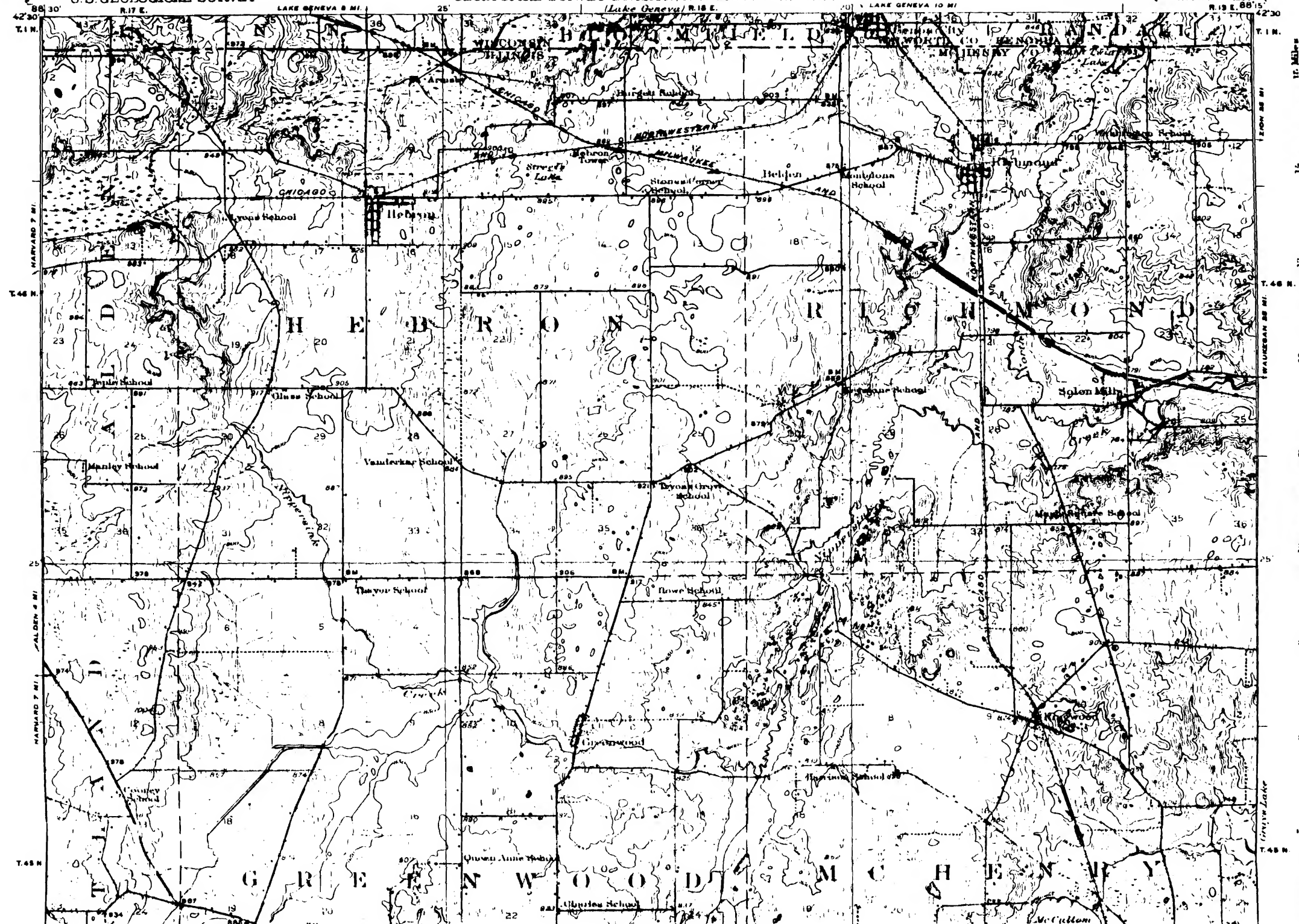


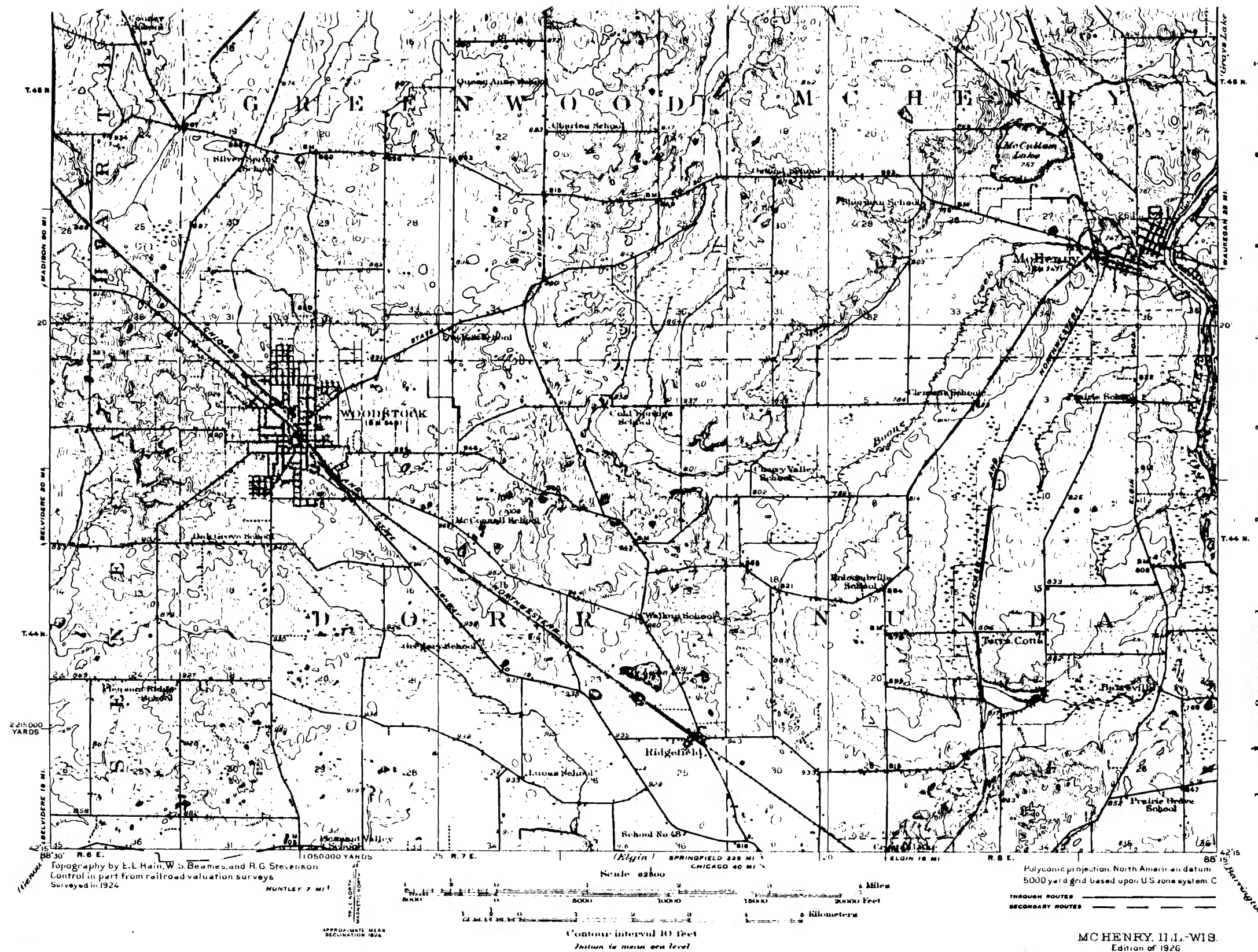
WOODS (when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
A.M. SHELTON, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M.M. LEIGHTON, CHIEF

ILLINOIS - WISCONSIN
MCHENRY QUADRANGLE





THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{12,500}$ (1 inch = one-half mile), with a contour interval of 10 or 20 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{25,000}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 20 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the northern or desert regions of New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{50,000}$ (1 inch = nearly 2 miles), with a contour interval of 20 to 100 feet.

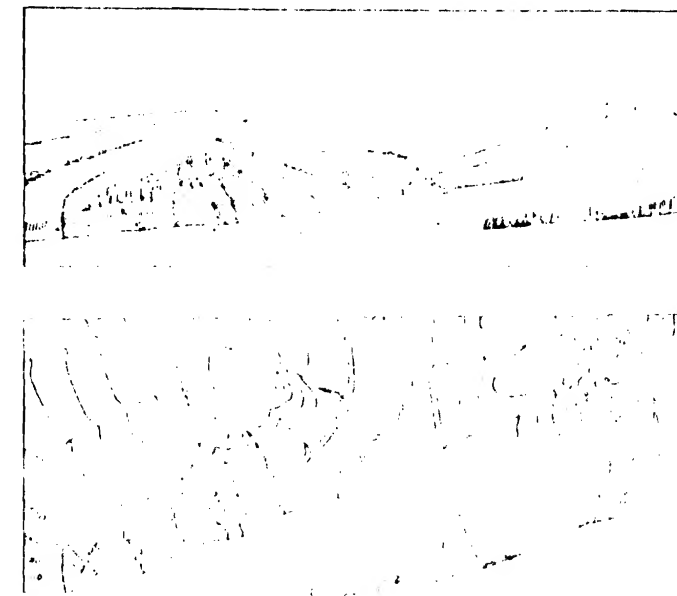
A topographic survey of Alaska has been in progress since 1900, and nearly 45 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by contour maps on a scale of $\frac{1}{25,000}$ of about 10 miles in diameter. About the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{50,000}$, but about 3,000 square miles

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



ing spurs separated by ravines. The spurs are terminated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined table land that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. Certain contour lines, every fourth or fifth one, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road corners, summits, surfaces of lakes, and bench marks—are also given on the map in figures, which show altitudes to the nearest foot only. More exact altitudes—those of bench marks—as well as the geodetic coordinates of triangulation stations, are published in bulletins issued by the Geological Survey.

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Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margin of the map are printed the names of adjoining quadrangles of which maps have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of those similar to the one on the other side of this sheet have been published.

The topographic map is the base on which the symbols of mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geological Atlas of the United States. More than 220 folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained free for educational and some special purposes, and at different prices. A circular of 10 pages and a leaflet, each containing maps, explain the symbols used on the maps and give the prices. The circular may be obtained free on request, or may be ordered by mail on the face of the folio. A circular explaining the symbols used on the maps may be obtained free on request.

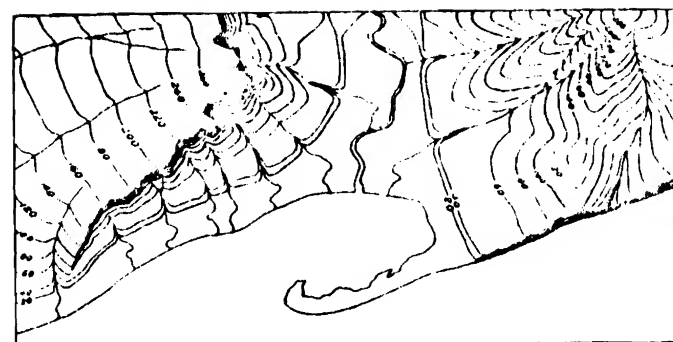
A circular explaining the symbols used on the maps may be obtained free on request.

regions of Alaska of such accuracy as to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{62,500}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{62,500}$, but about 4,000 square miles has been mapped on a scale of $\frac{1}{62,500}$ or larger.

The Hawaiian Islands, with the exception of the small islands at the western end of the group, have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups: (1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping

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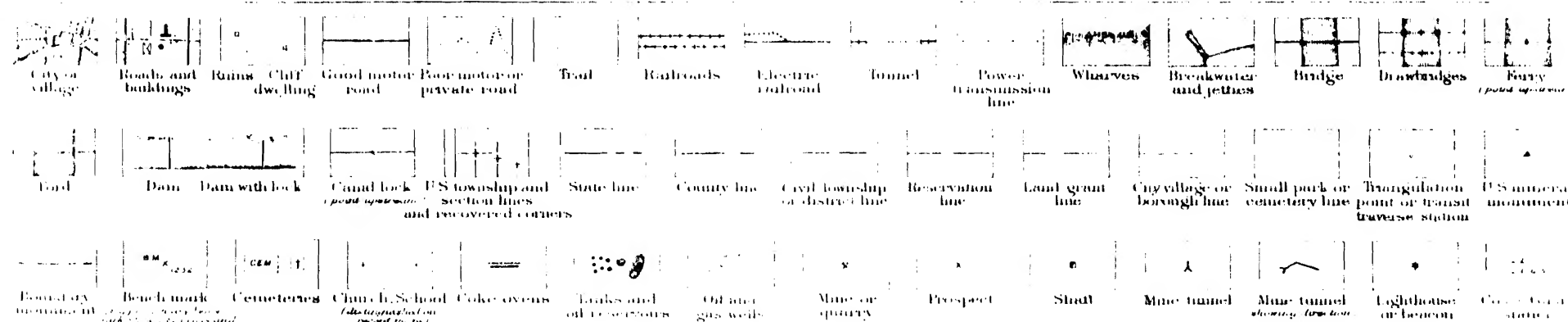
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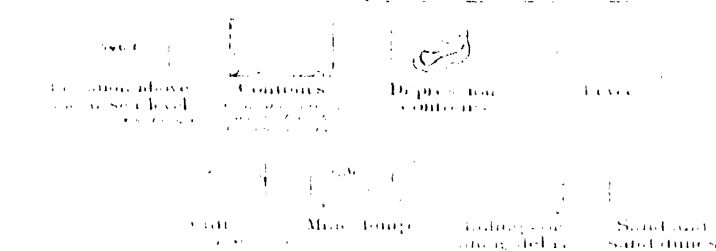
September, 1928.

STANDARD SYMBOLS

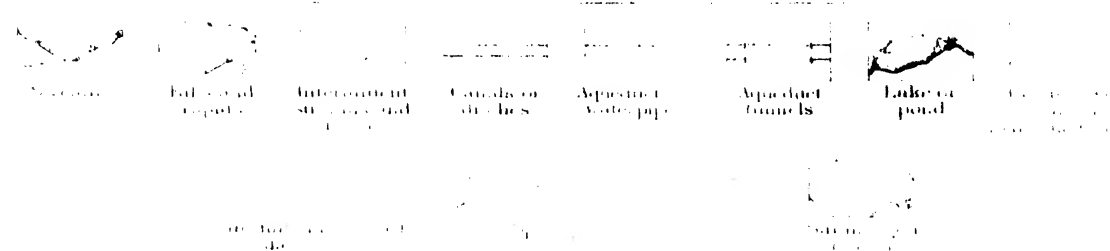
CULTURE (printed in black)



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WATER (printed in blue)



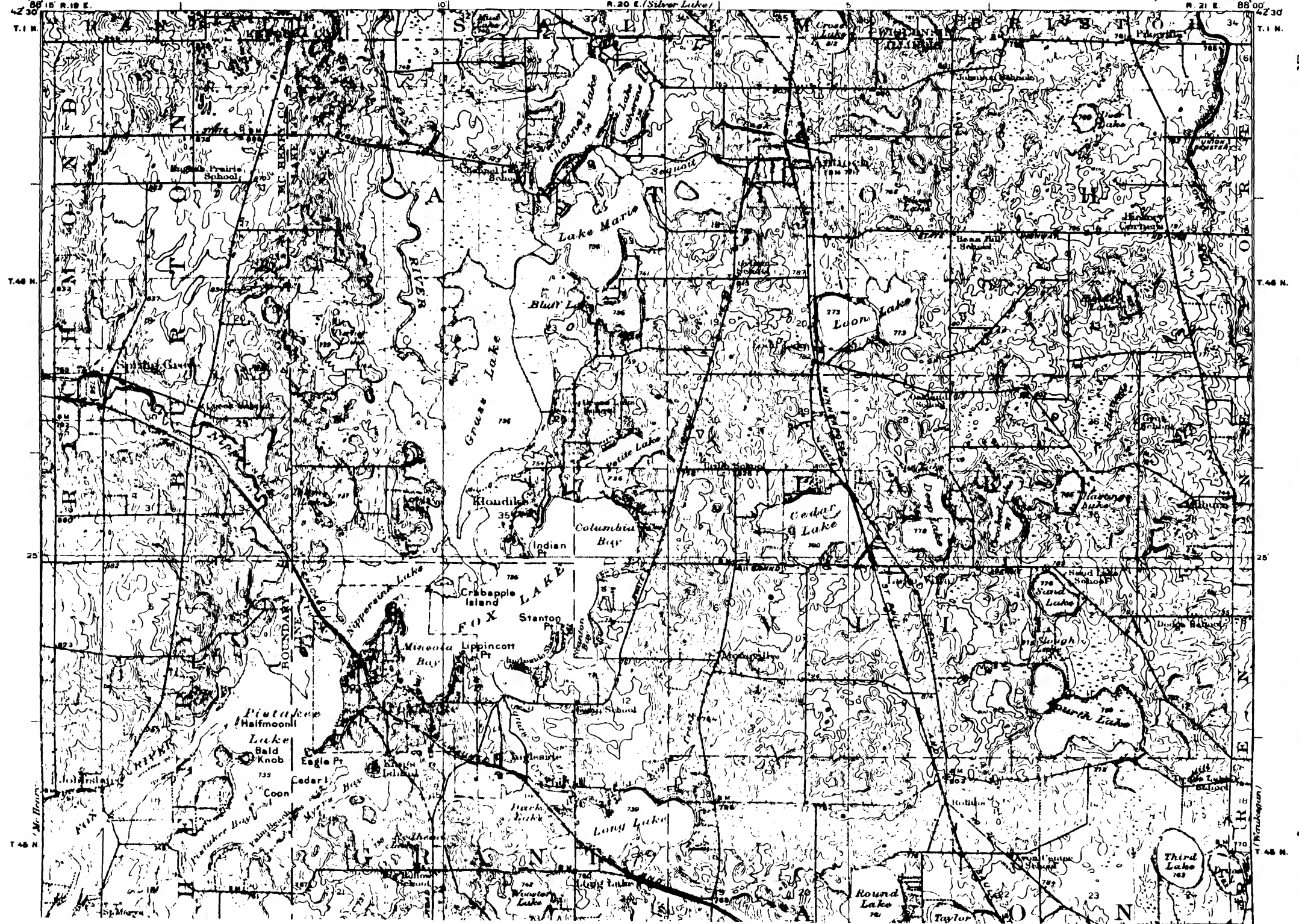
which show, in brown, the

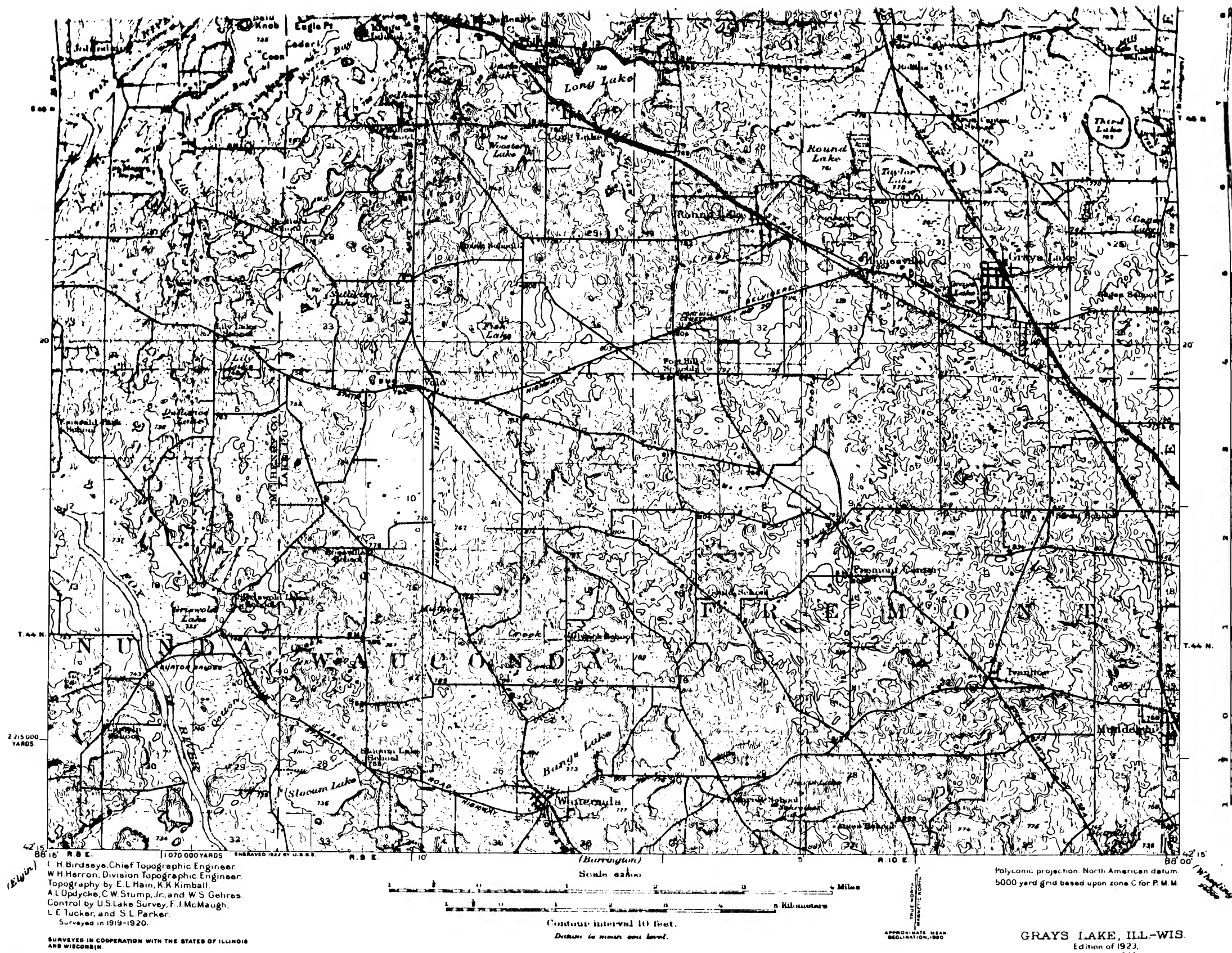
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
M.F. WALSH, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M. M. LEIGHTON, CHIEF, URBANA ILLINOIS

STATE OF WISCONSIN
REPRESENTED BY THE
STATE GEOLOGIST

ILLINOIS-WISCONSIN
GRAYS LAKE QUADRANGLE





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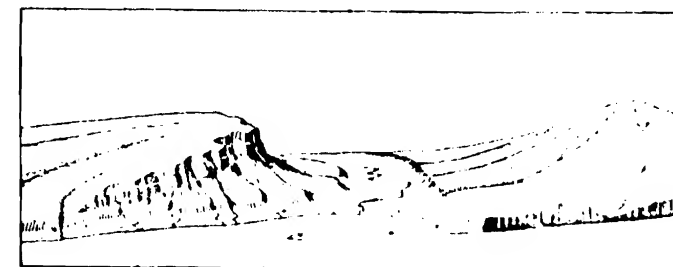
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The topographic map is the base on which the geology and mineral resources of a quadrangle are represented, and the maps showing these features are bound together with a descriptive text to form a folio of the Geologic Atlas of the United States. More than 220 folios have been published.

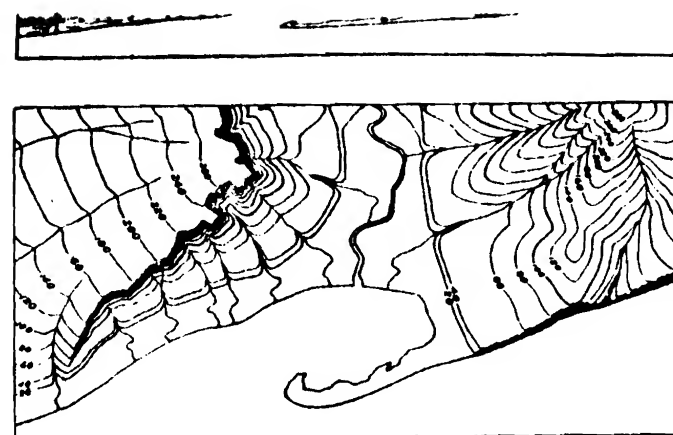
Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 per cent is allowed on an order for maps amounting to \$5 or more at the retail price. The geologic folios are sold for 25 cents or more each, the price depending

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

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The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly inclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gentle slope.

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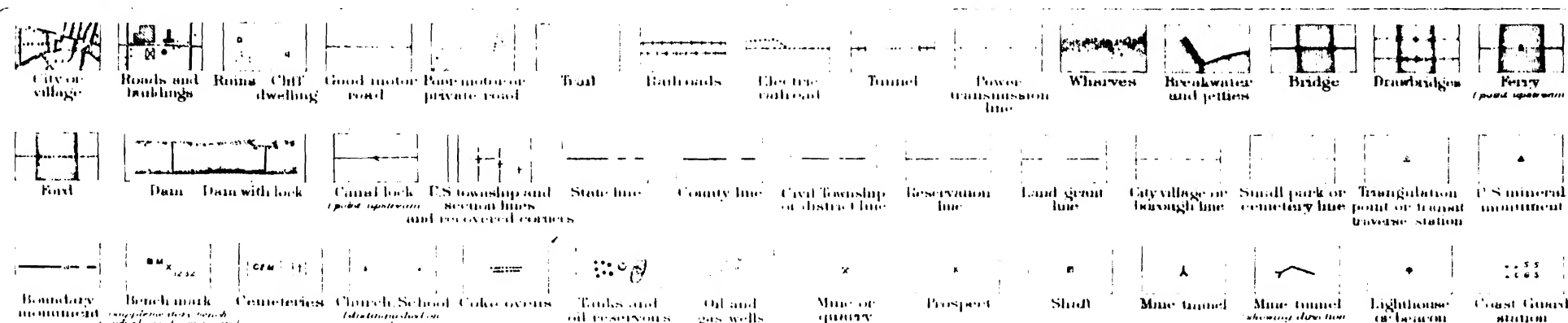
Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

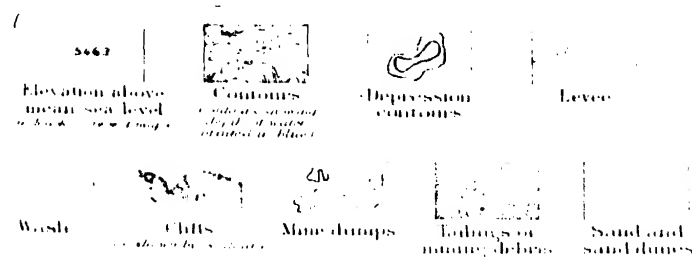
September, 1928.

STANDARD SYMBOLS

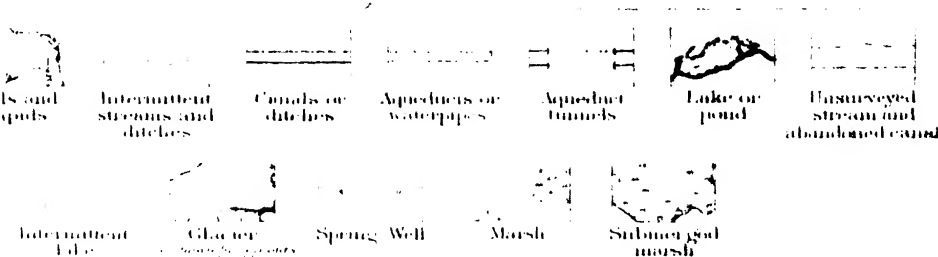
CULTURE (printed in black)



RELIEF (printed in brown)



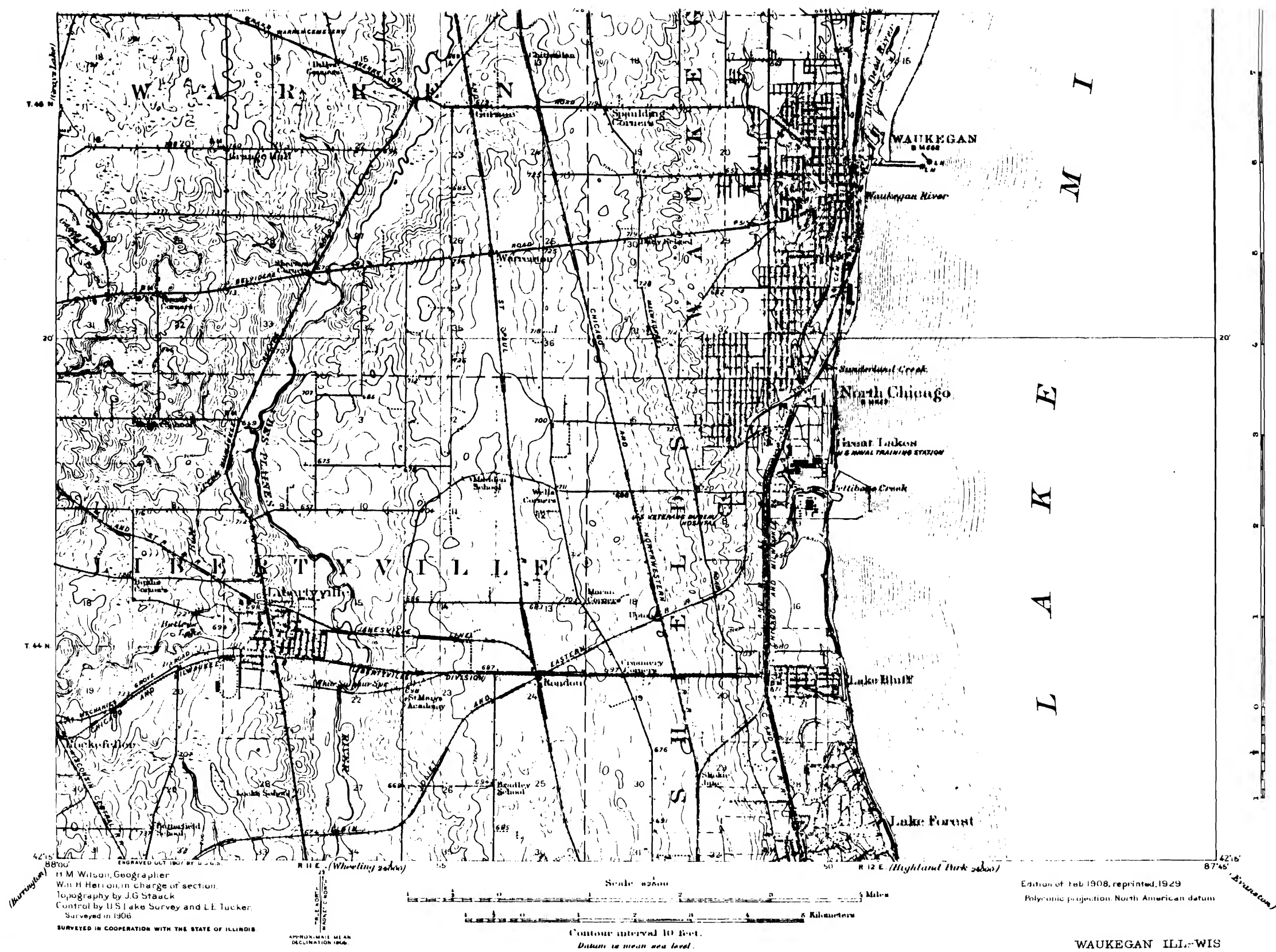
WATER (printed in blue)



WOODS (when shown, green of the green)

STATE OF ILLINOIS
REPRESENTED BY THE
DEPARTMENT OF REGISTRATION AND EDUCATION
GEOLOGICAL SURVEY DIVISION.

[illegible]



THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a standard topographic atlas of the United States. This work has been in progress since 1882, and its results consist of published maps of more than 42 per cent of the country, exclusive of outlying possessions.

This topographic atlas is published in the form of maps on sheets measuring about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, they represent areas of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, and miles. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 similar units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys for the United States proper and the resulting maps have for many years been divided into three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = one-half mile), with a contour interval of 1, 5, or 10 feet.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 25 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, are made with sufficient accuracy to be used in the publication of maps on a scale of $\frac{1}{250,000}$ (1 inch = nearly 2 miles), with a contour interval of 25 to 100 feet.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of 1:500,000, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of 1:250,000, but about 41,000 square miles has been mapped on a scale of 1:1,000,000.

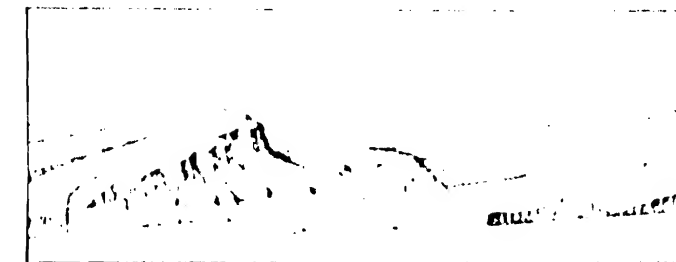
The Department of the Interior, with the cooperation of the United States Geological Survey, is making a series of maps of the Alaska Territory.

(works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams, the lakes, and the sea by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on some maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The line of the seacoast itself is a contour, the datum or zero of altitude being mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope; lines that are close together indicate a steep slope; and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



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Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which map have been published. Over 3,500 quadrangles in the United States have been surveyed, and maps of them under the one on the other side of this sheet have been published.

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Information on the maps of Alaska and Hawaii, showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free.

A topographic survey of Alaska has been in progress since 1898, and nearly 43 per cent of its area has been so mapped. About 10 per cent of the Territory has been covered by a reconnaissance map on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{625,000}$, but about 1,000 square miles has been mapped on a scale of $\frac{1}{250,000}$ or larger.

The feature shown on the maps may be assessed in three groups: (1) water, including sea, lake, river, canal, swamps, and other bodies of water; (2) relief, including mountain, hills, valley, and other feature of the land surface; (3) culture

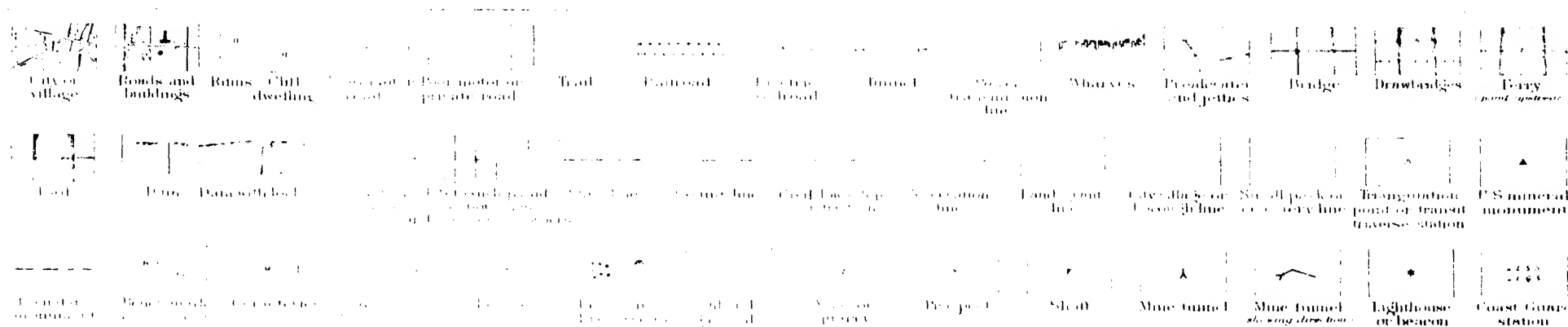
[illegible]

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

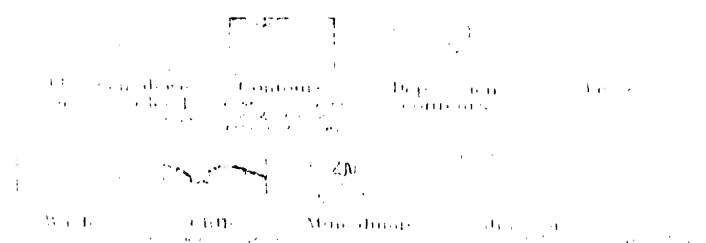
STANDARD SYMBOLS

CULTURE
of colored blocks

up to and including

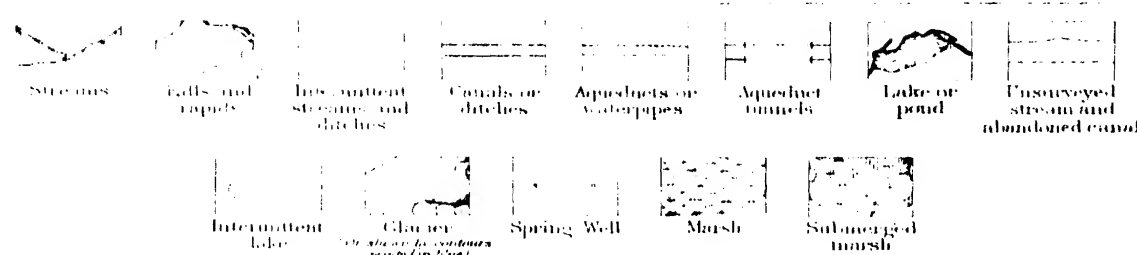


174 LIII'

$$j = 1, \dots, m, \quad i = 1, \dots, n$$


WATER

printed in blue



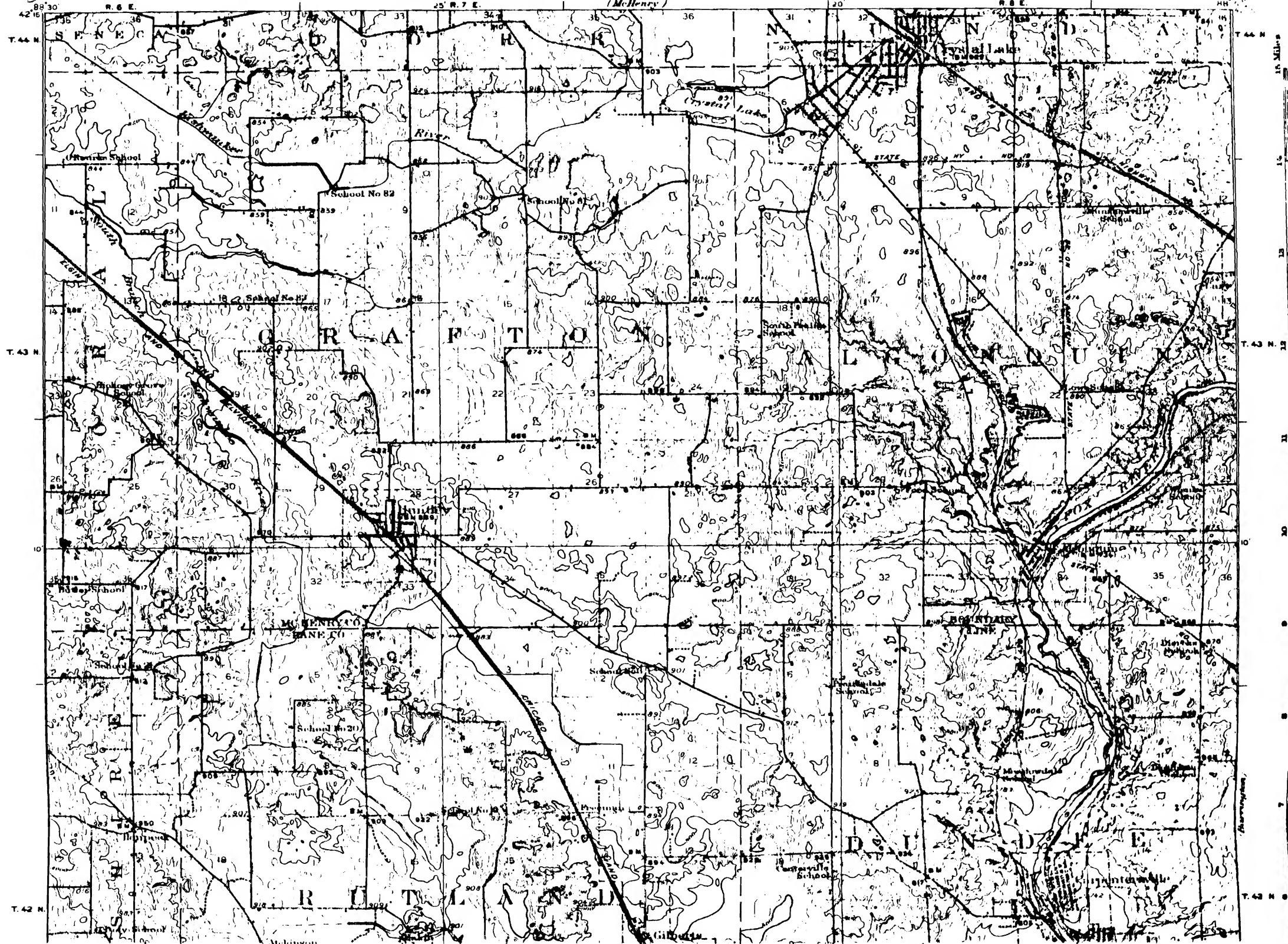
WOODS

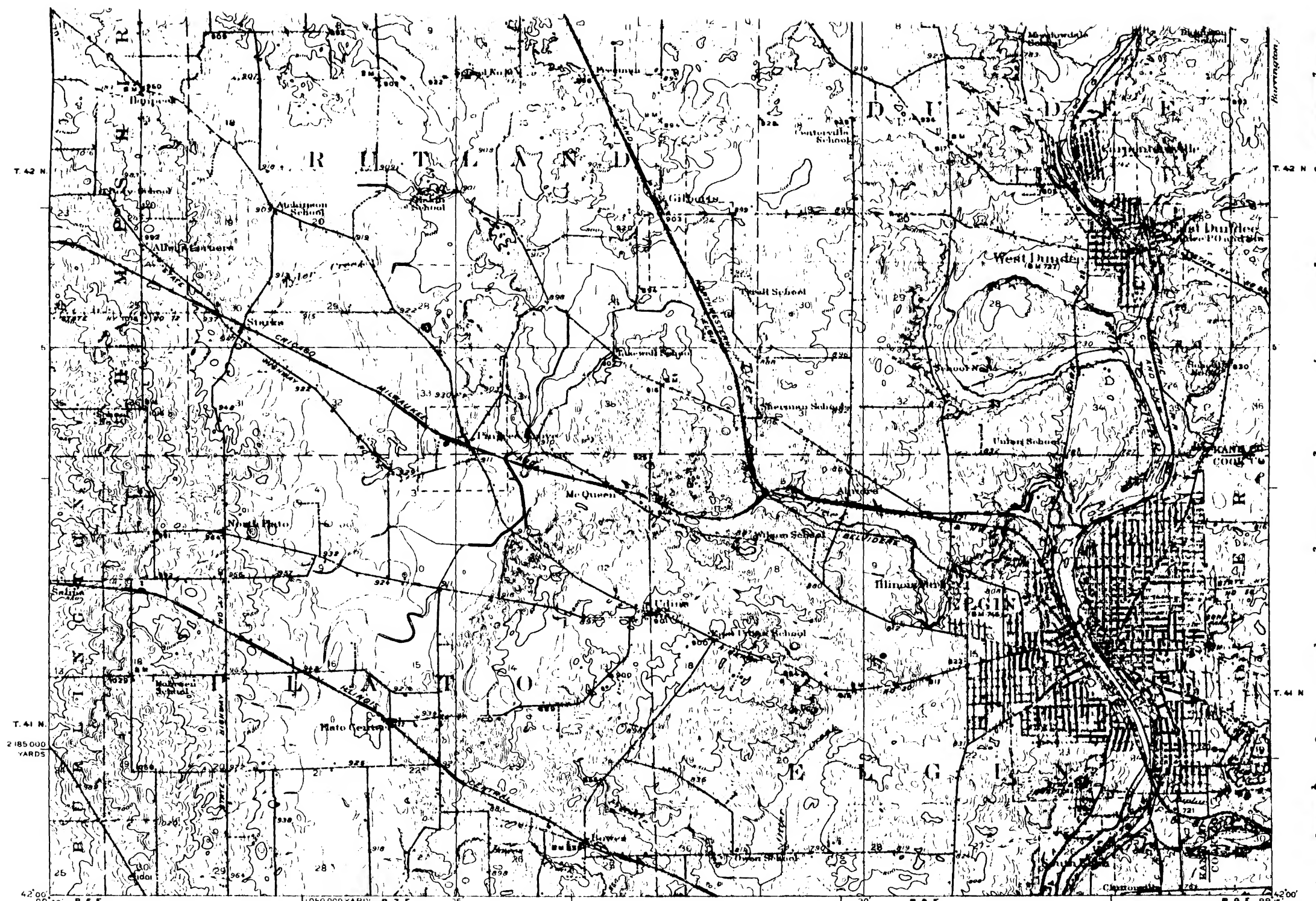
(when shown, printed in green)

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

DEPARTMENT OF REGISTRATION AND EDUCATION
M. F. WALSH, DIRECTOR
GEOLOGICAL SURVEY DIVISION, M. M. LEIGHTON, CHIEF, URBANA, ILLINOIS
(McHenry)

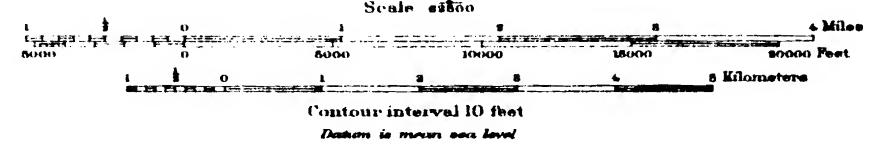
ILLINOIS
ELGIN QUADRANGLE





Topography by E. L. Hain, R. G. Stevenson, U. C. Cope,
and J. Q. Ford.
Control in part from railroad valuation surveys and
Illinois Rivers and Lakes Commission.
Surveyed in 1923.

APPROXIMATE MEAN
DECLINATION, 1923



Polyconic projection, North American datum
5000 yard grid based upon U.S. zone system, C

ELGIN, ILL.
Edition of 1925
reprinted 1932

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

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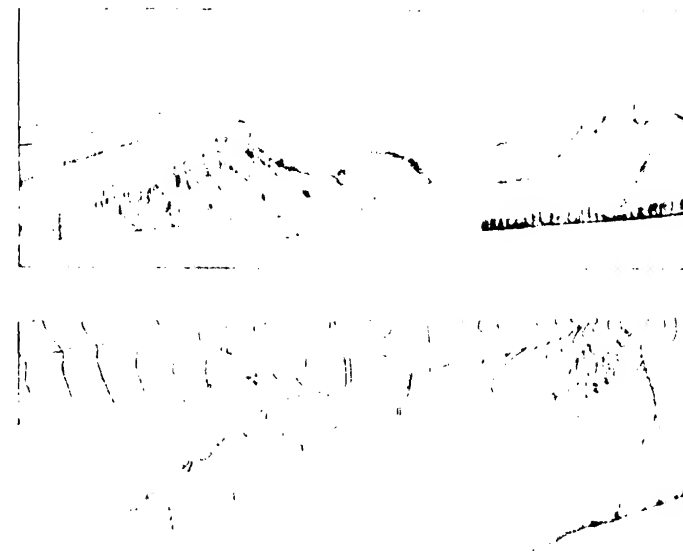
A topographic survey of Alton and its environs in 1896 by the U.S. Geological Survey, conducted by the late Dr. J. W. Powell, indicates that about 10% of the town's surface area is covered by sand and gravel deposits, most of which are less than 10 cm (4 in.) thick. Most of the remaining surface area is composed of beach material, or sand, which is 10 cm to 1 m (4 in. to 39 in.) thick.

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The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping sides.

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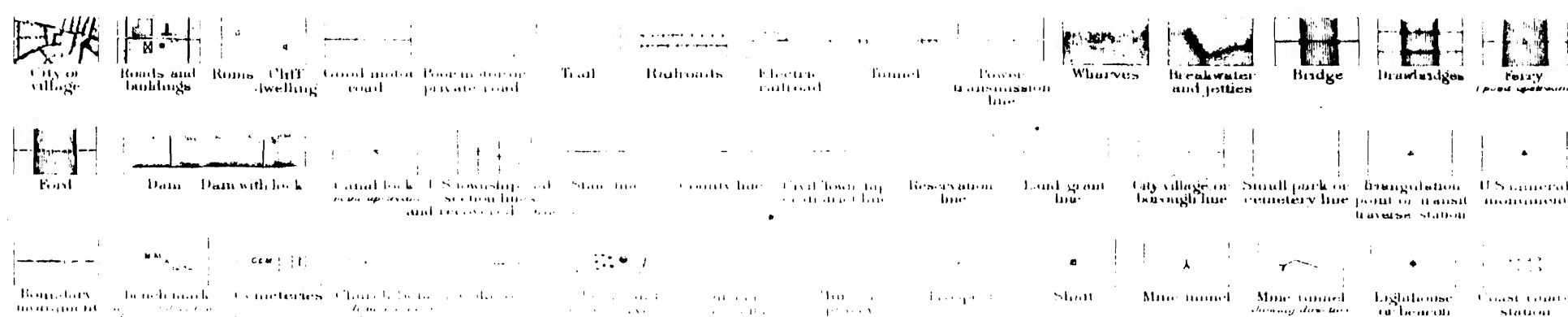
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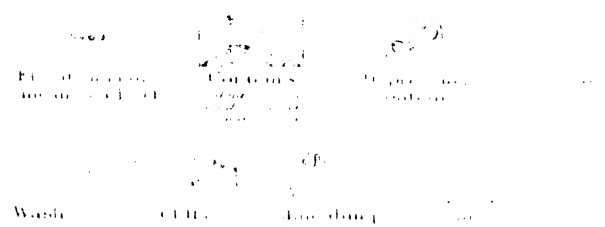
September, 1928.

STANDARD SYMBOLS

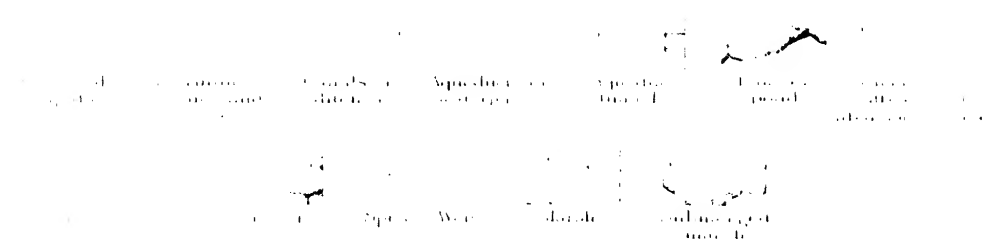
CULTURE (printed in black)



RELIEF (printed in black)



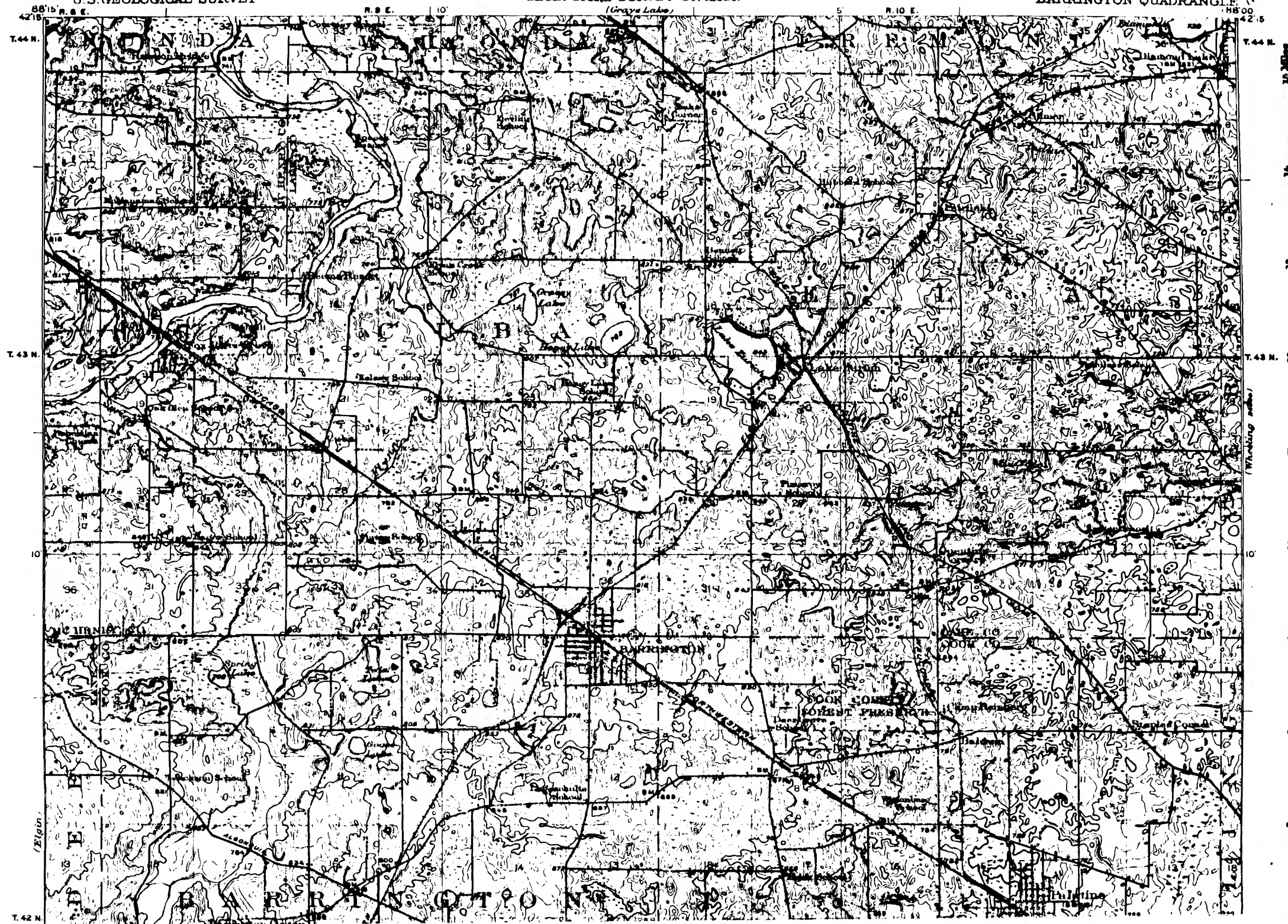
WATER (printed in blue)

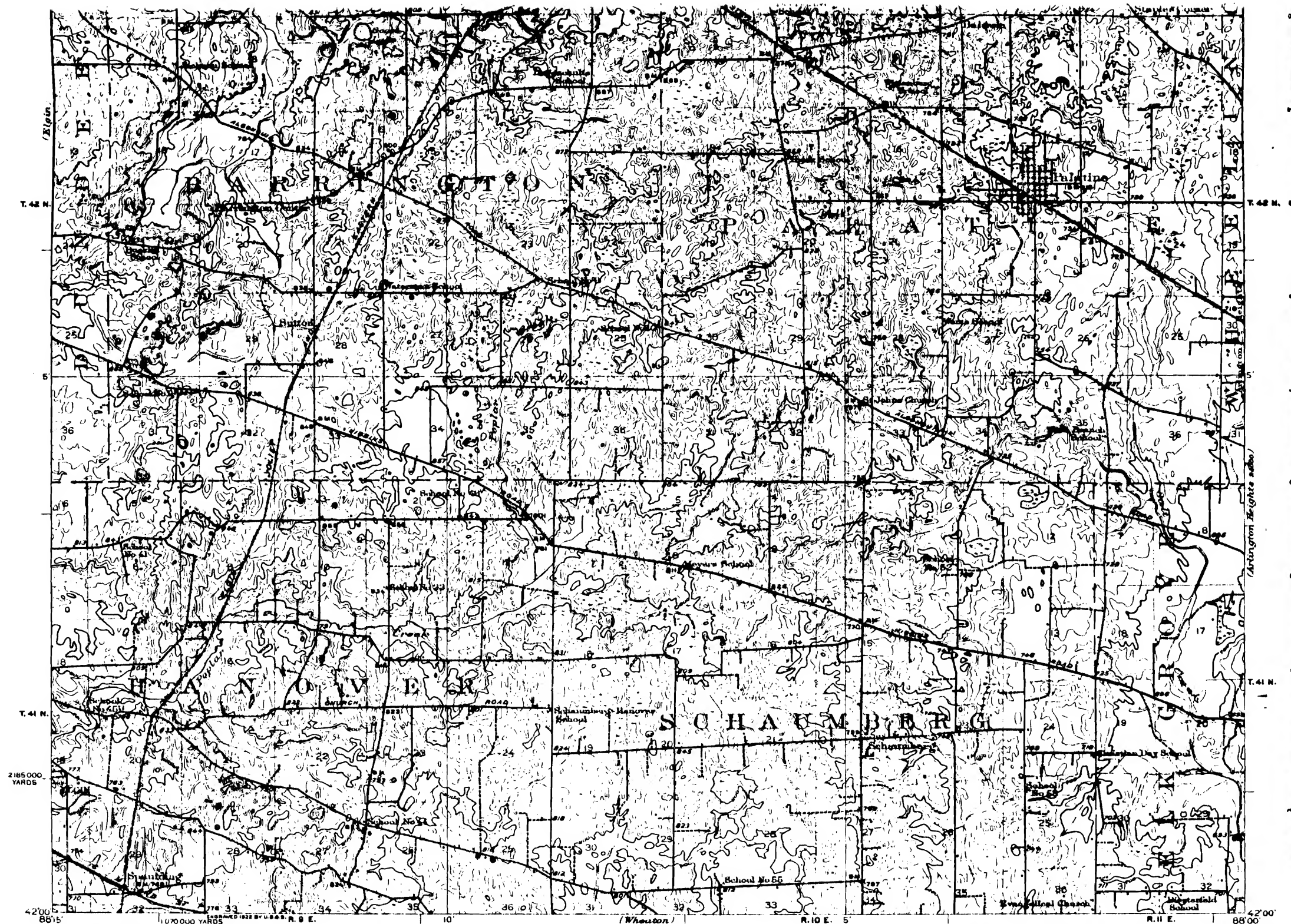


DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
REPRESENTED BY THE
DEPARTMENT OF REGISTRATION AND EDUCATION
GEOLOGICAL SURVEY DIVISION

ILLINOIS
BARRINGTON QUADRANGLE





C.H. Birdseye, Chief Topographic Engineer.
 W.H. Herron, Topographic Engineer in Charge.
 Topography by Gilbert Young, W.K. McKinley, and W.B. Brewer.
 Control by F.J. McMaugh, L.E. Tucker, and S.L. Parker.
 Surveyed in 1919-1920.

SURVEYED IN COOPERATION WITH THE STATE OF ILLINOIS.



Scale 1:62,500

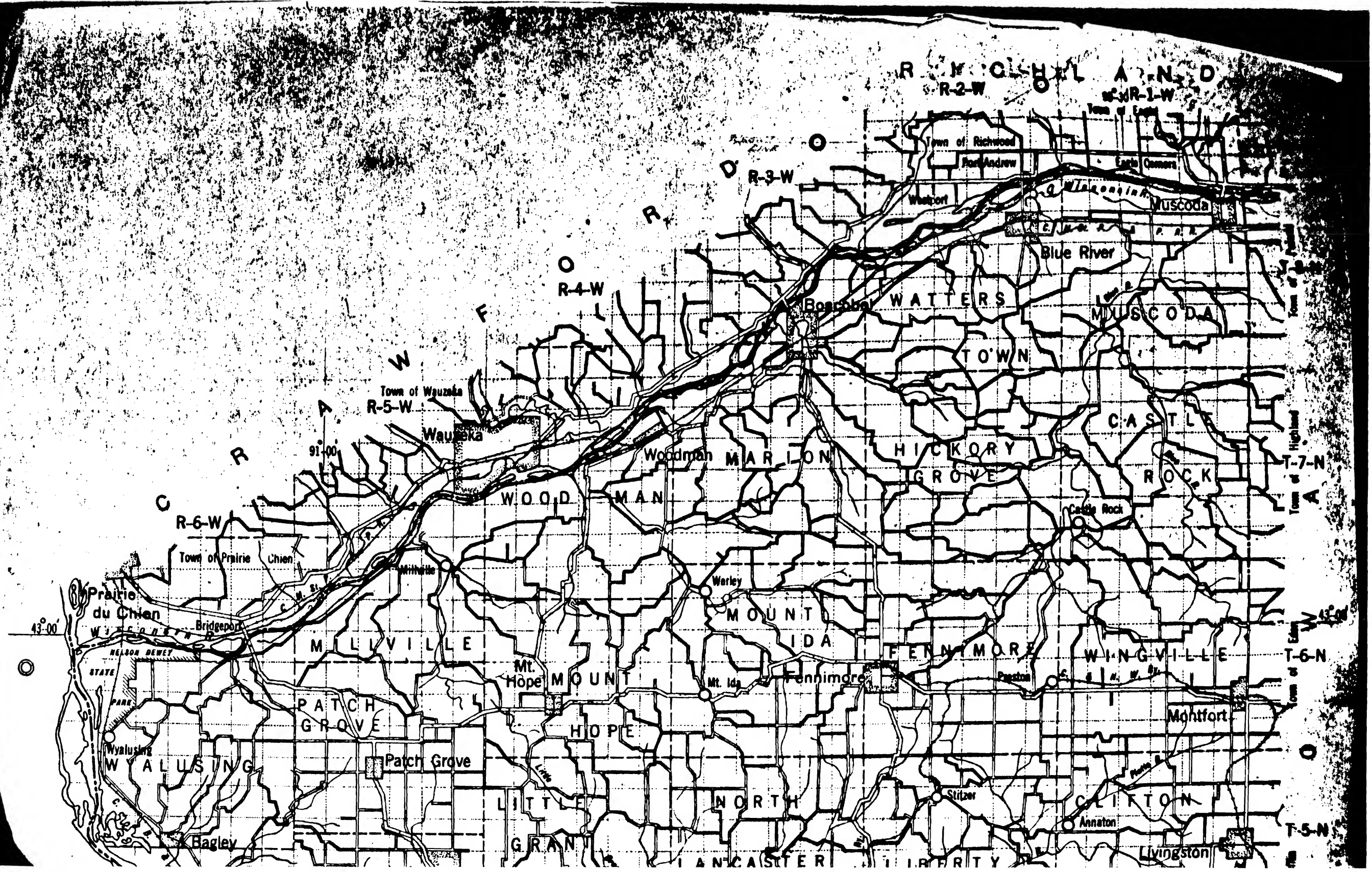
Contour interval 10 feet.

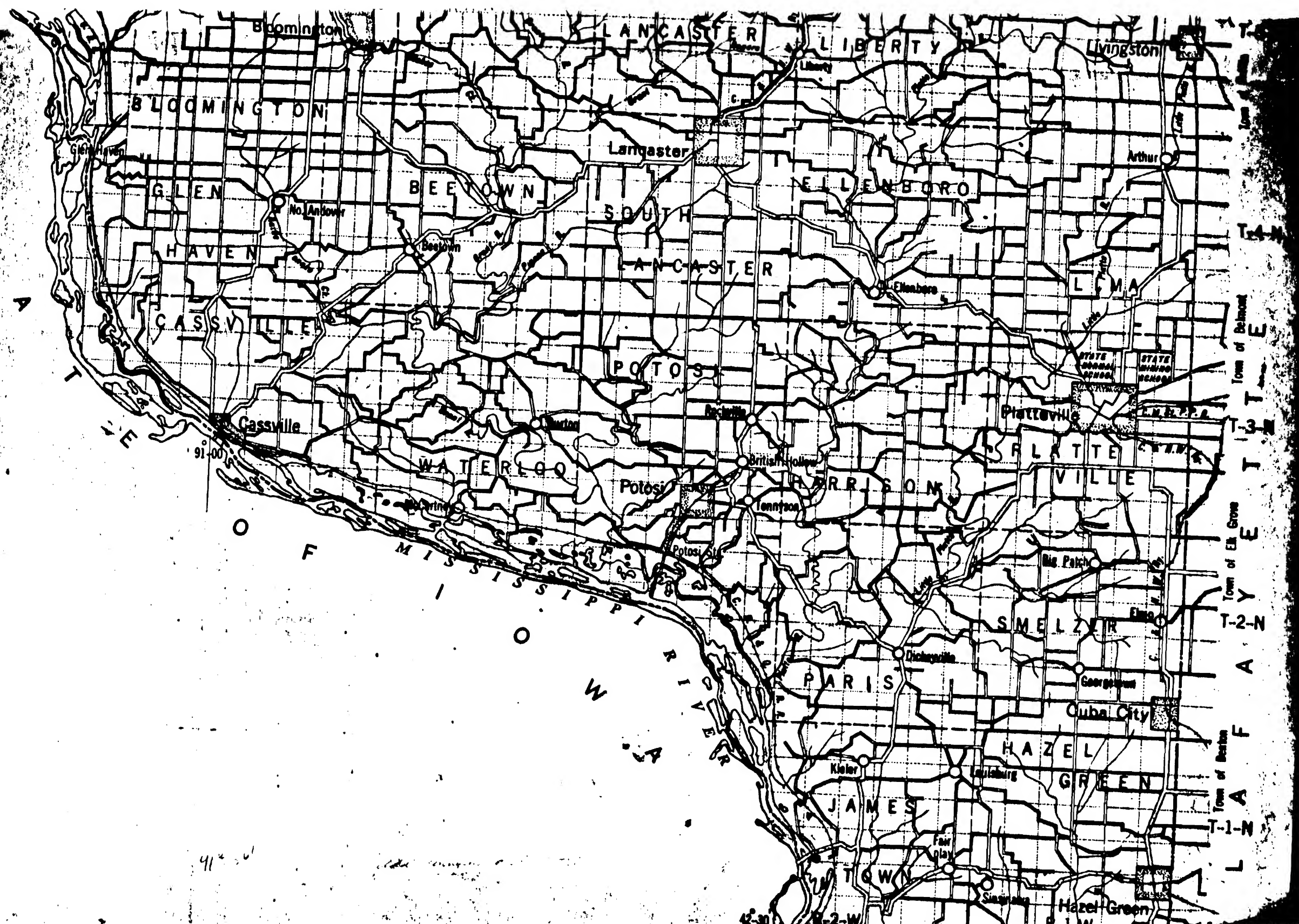
Distances in miles and feet

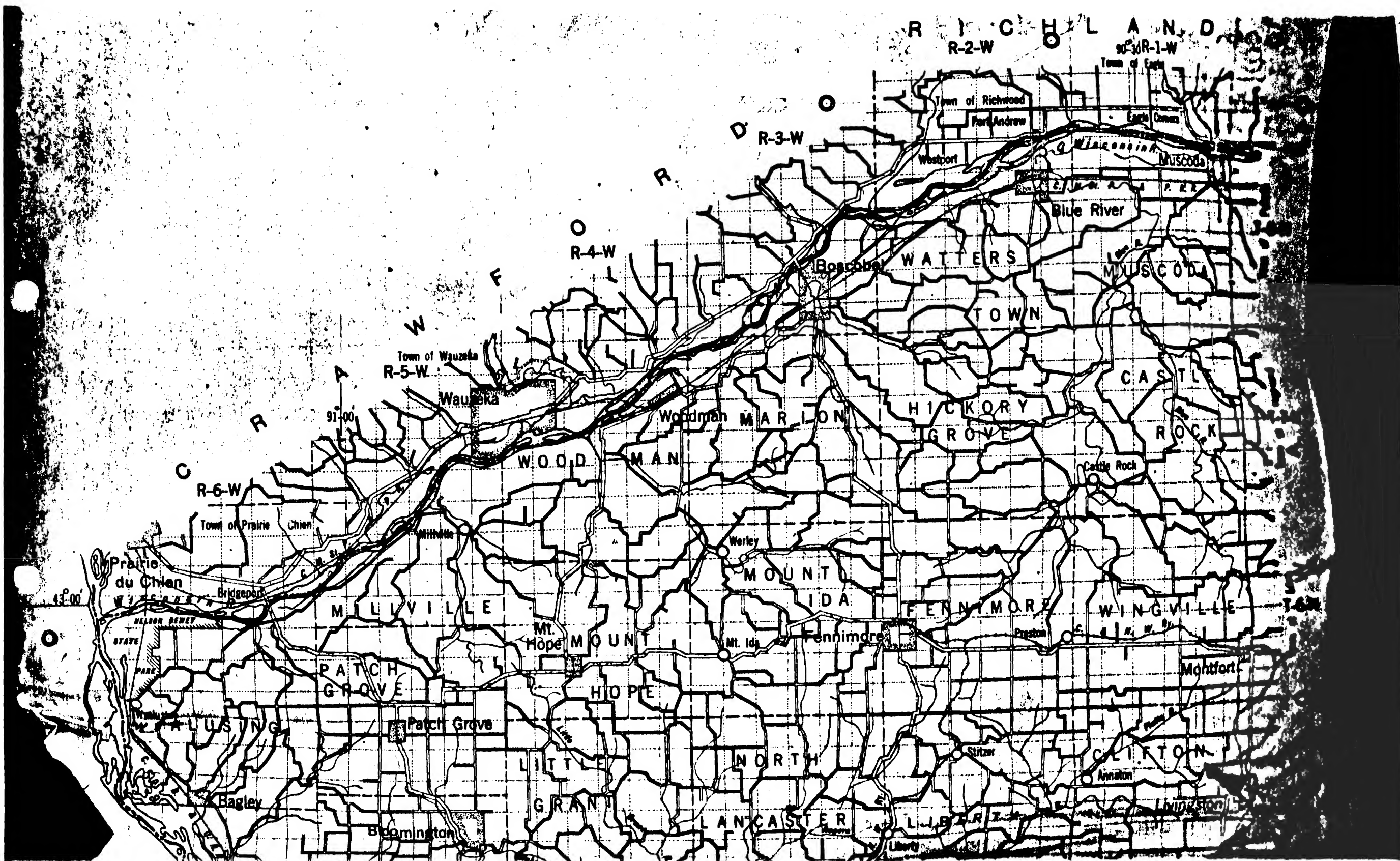
APPROXIMATE MEAN
DECLINATION 1919

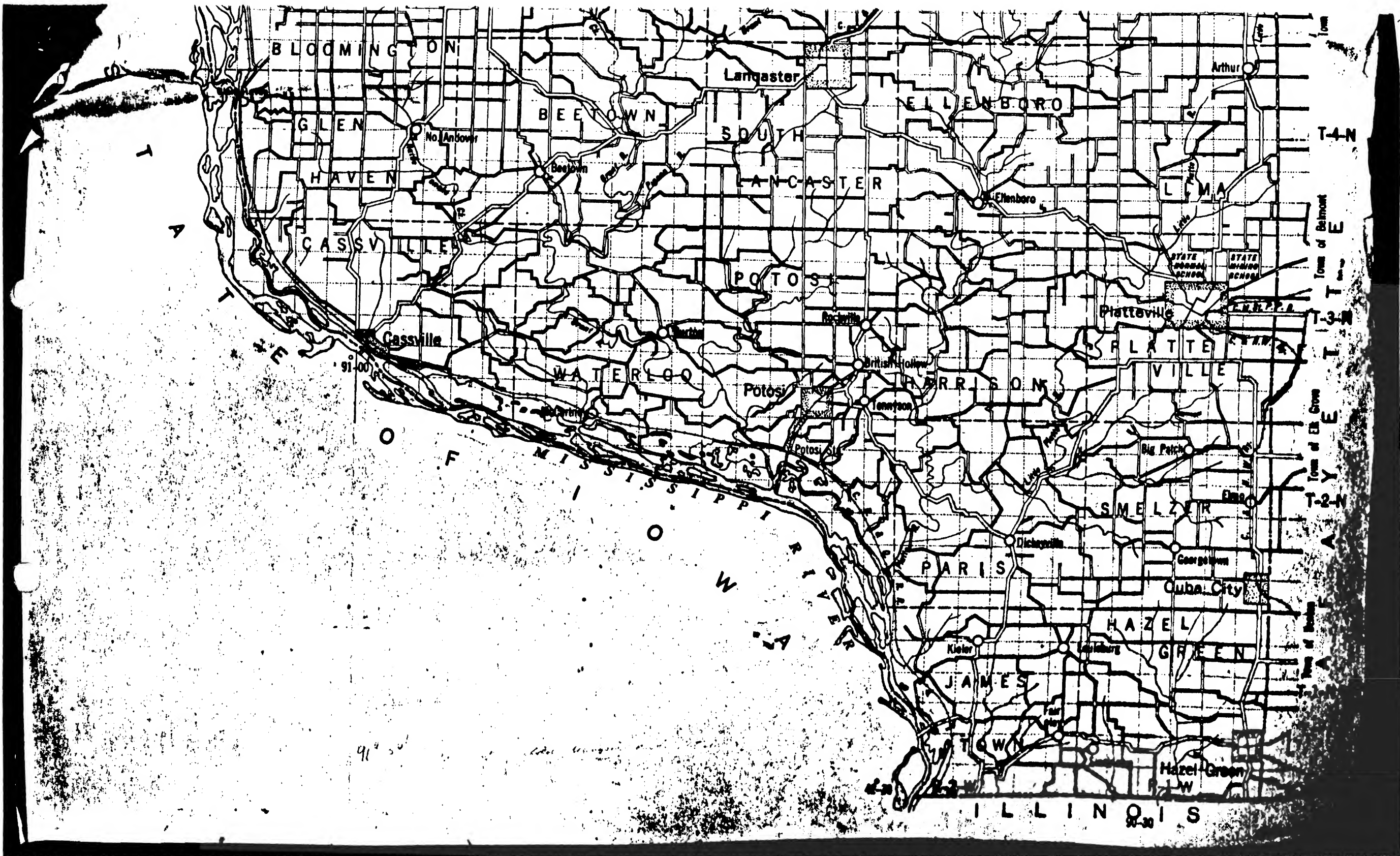
Polyconic projection, North American datum.
 5000 yard grid based upon zone C for P.M.M.

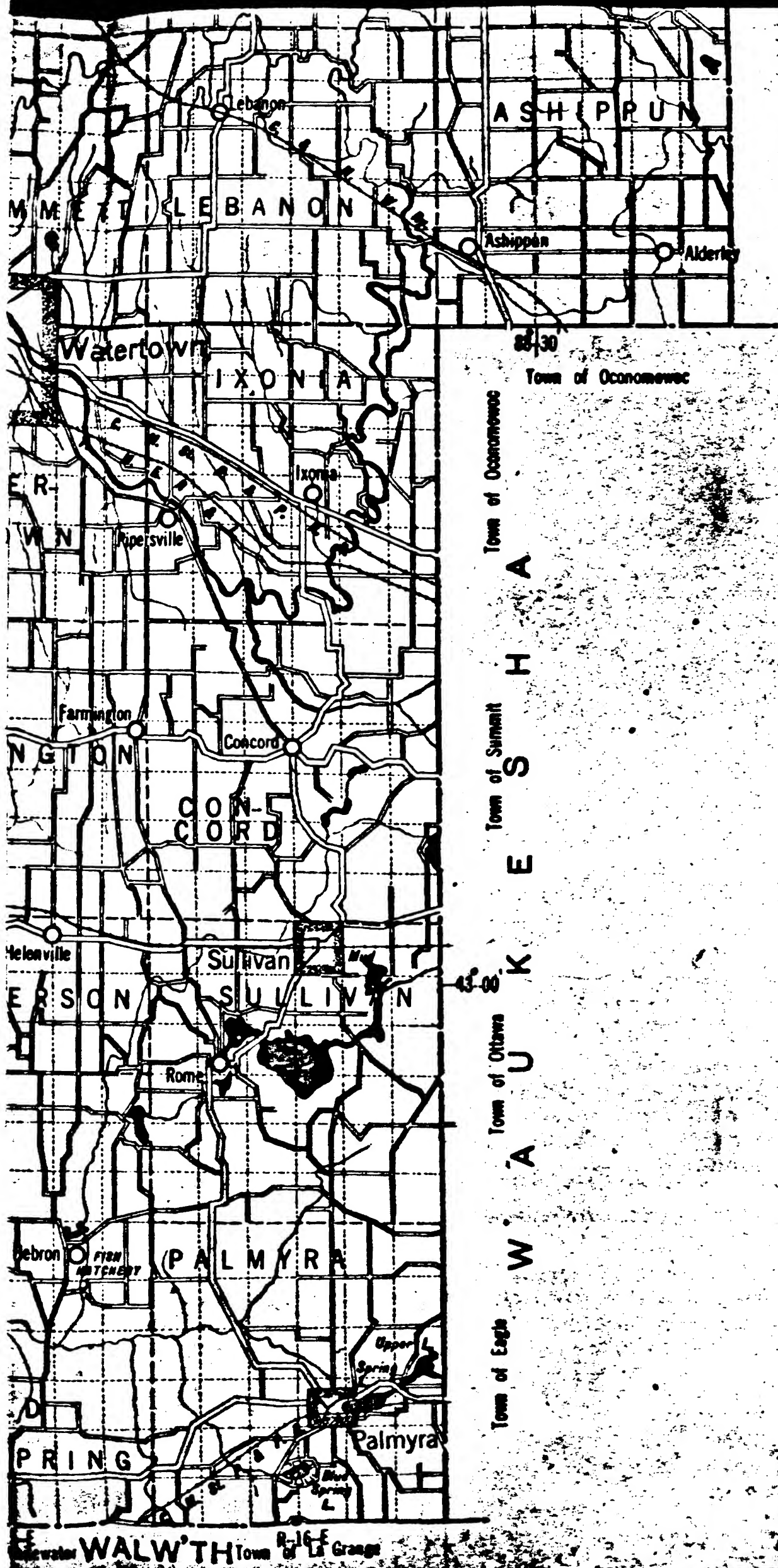
BARRINGTON ILL.











Town of Erin

W A

88° 30'

Town of Oconomowoc

Town of Oconomowoc

H A

Town of Summit

E

K

Town of Otawa

A U

W

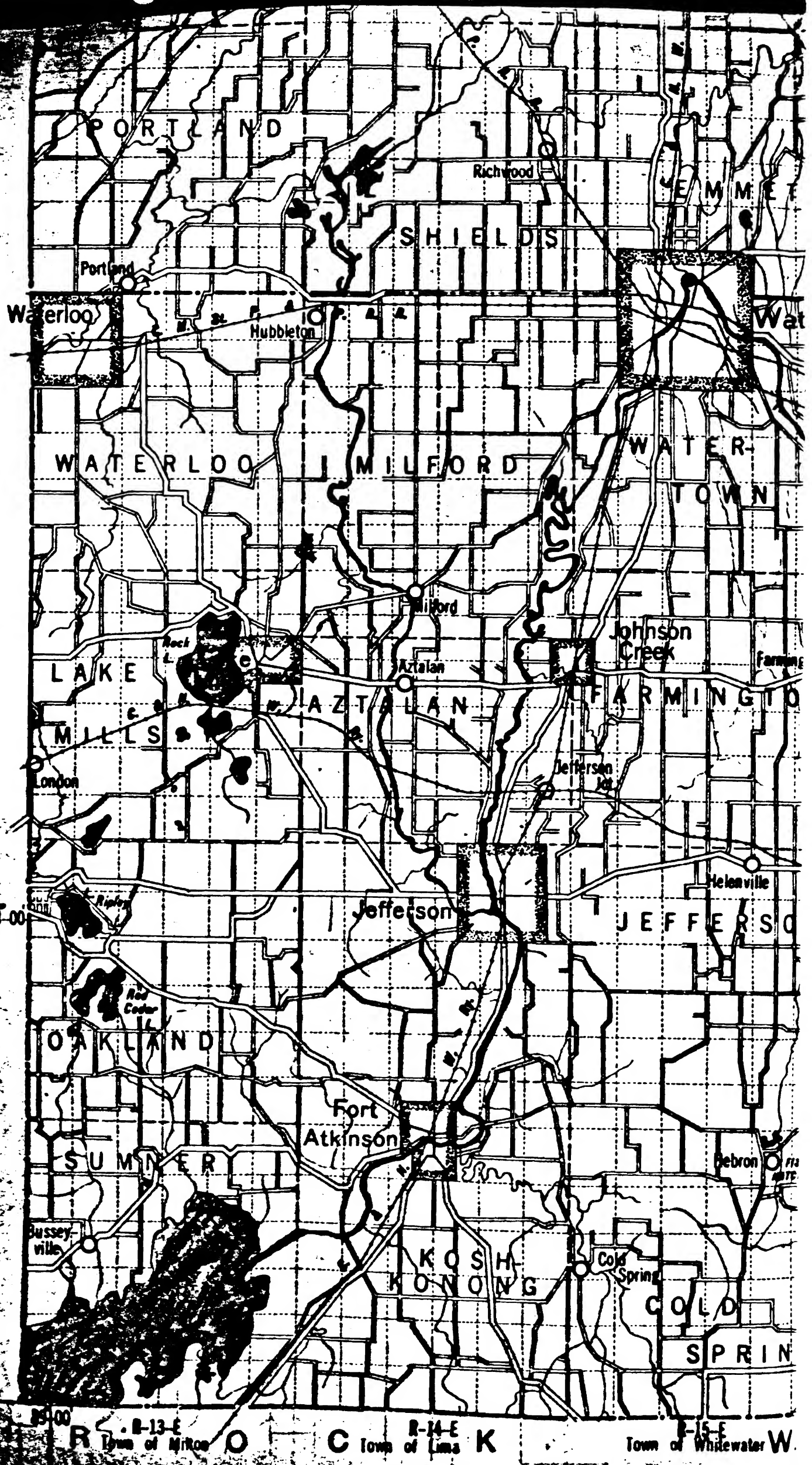
Town of Eagle

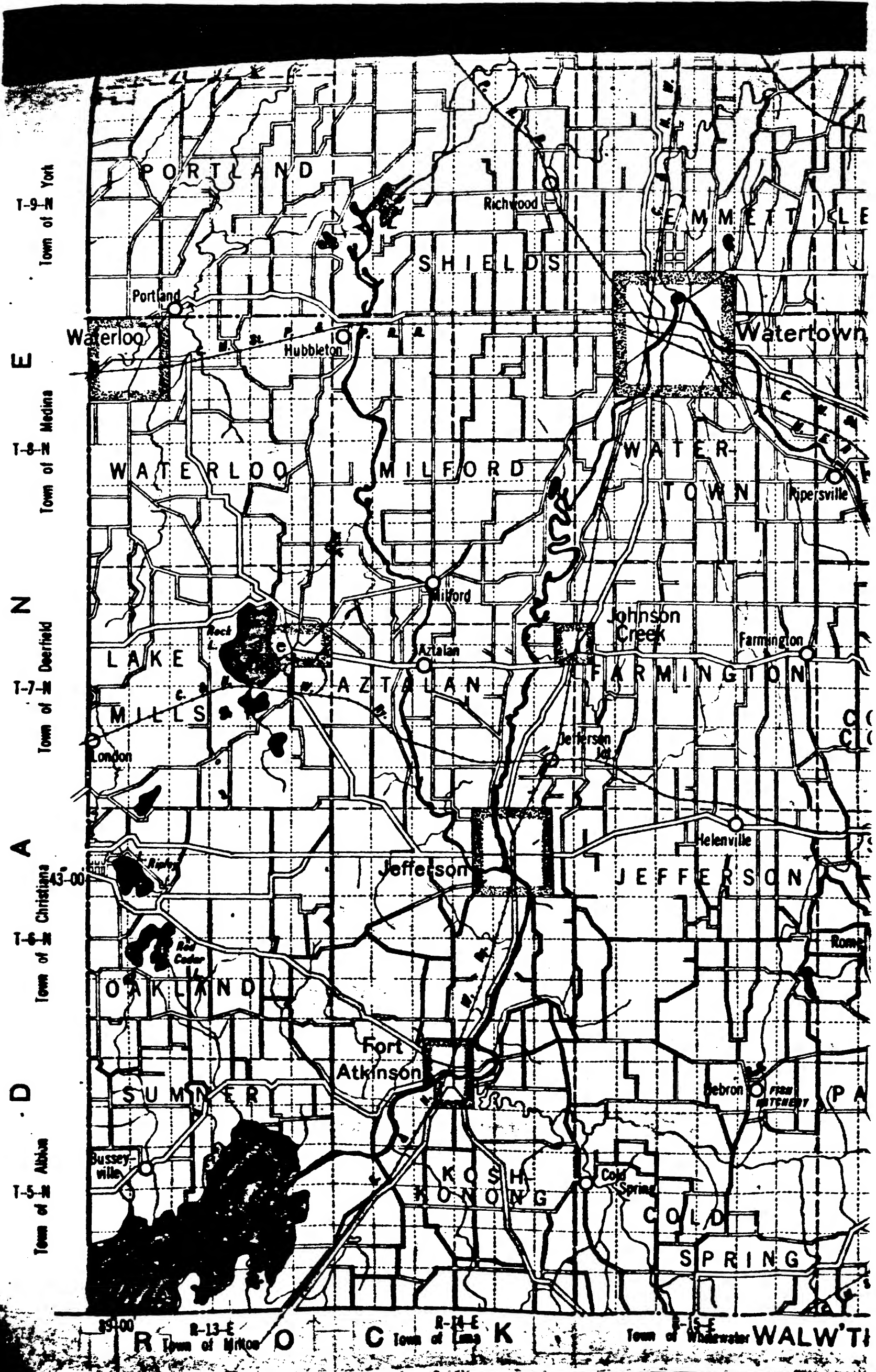
43° 00'

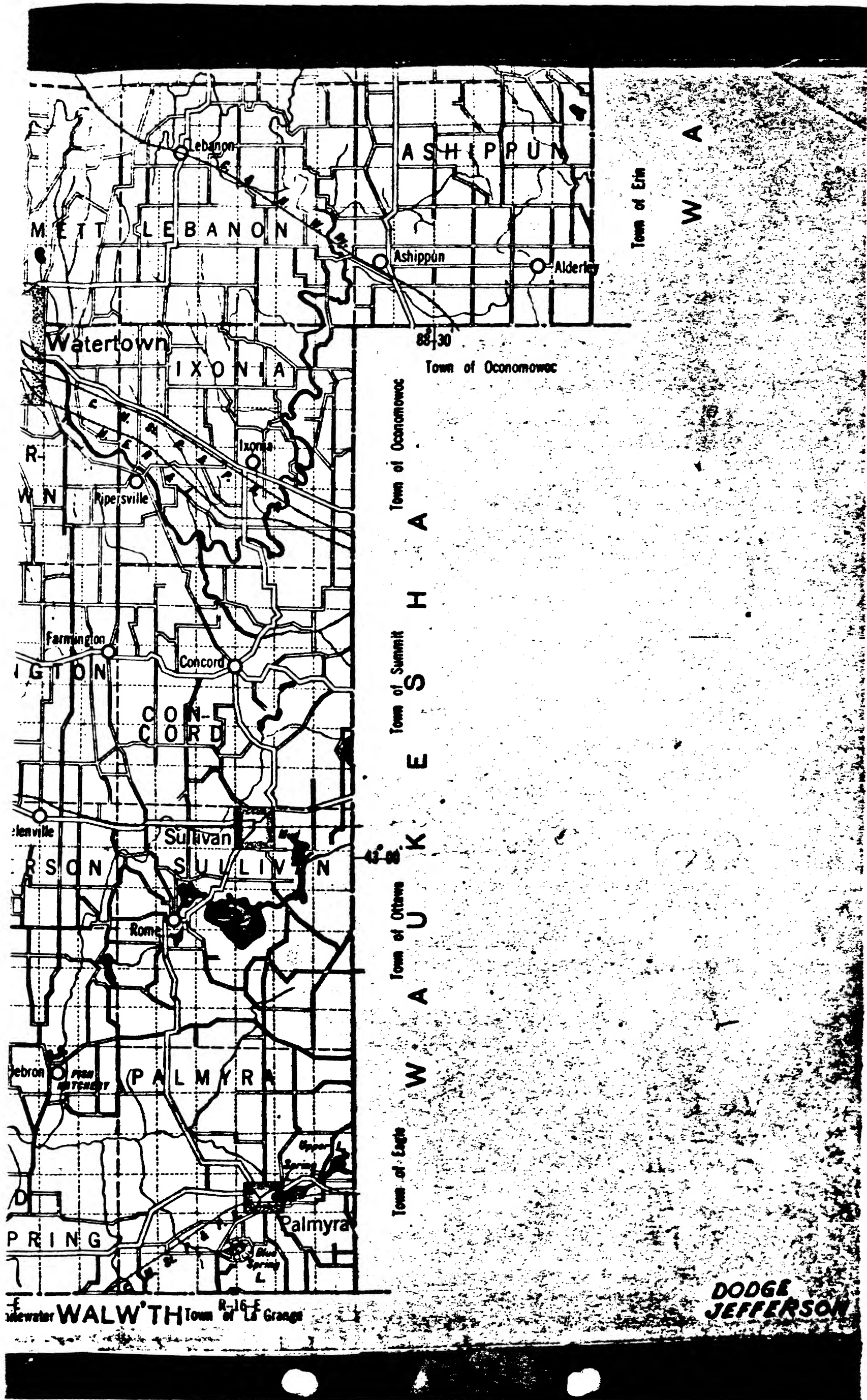
Walworth Town of La Grange

DODGE
JEFFERSON

Town of York
T-9
E
Town of Medina
T-8
N
Town of Deerfield
T-7
A
Town of Christiansburg
T-6
D
Town of Albion
T-5
R-13-E
Town of Milton
O
R-14-E
Town of Lima
K
R-15-E
Town of Whitewater
W







Car No.	Make of Car	Motor No.	Purchased Where:	When:	By:	Subject:	1933 License	Remarks
1	Auburn Sedan	BB-1927	San Francisco Auburn Calif. Co., 1625 Van Ness Ave.	10/9/33	William B. Lohman, 1159 Van Ness Ave., San Francisco		Cal. 7-2-33	Vehicle & License
2	Buick Sedan	2797868 2647365 (Serial)	Reno - with new \$500 bills	1/11/33	R.E. Davis Hotel Anderson Reno		Nev. 1242 2/8/33	11 Buick Reno
3	Buick Sedan	2858090 2703063 (Serial)	Toledo, Ohio F.E. Anderson 3900 Summit St. See 7-576-1707-3 for lead Chicago	9/27/33	T.C. Blackburn 4214 W. Lockwood (vacant lot) Toledo, Ohio		Ohio C-2471 9/28/33 Title #15271	11 Buick Toledo
4	Ford V-8 Sedan	18493080	Toledo Lyman D. Arnold 1002 Adams St.	9/15/33			Ohio C-2471 9/26/33	11 Buick Toledo
5	Pontiac Sedan	885160 770178 (Serial)	Reno with new \$500 (2)	1/9/33	H.J. Harvey Hotel Anderson Reno		Nev. 1283 1/3/33	11 Buick Reno
6	Ford V-8 Deluxe Coupe	328420		6/27/33	E.V. Davis		Ill. 1-2-33 7/31/33 Min. 1-2-33 11/9/33	11 Buick Chicago
7	Chevrolet Sedan	3554674 1-CAD23077 (Serial)		4/15/33			Ill. 774257 4/17/33	11 Buick Chicago
8	Plymouth Sedan	FB-81821 (now 8181) 175709 (Serial)					Nev. 7985 12/2/34	11 Buick Reno
9	Ford V-8 Deluxe Coupe	18 304 794						
10	Graham-Paige	1024021 10181956 (Chassis #) -	San Francisco Graham-Paige Co. 1665 Van Ness St.	2/8/33	E. L. Burnes		Calif. 2-4-33 2/9/33	11 Buick San Francisco
11	Dodge Sedan Traded in on #1	DP 65846		8/21/33	NP-John H. Montgomery 3206 W. Jackson Blvd. Chicago		Ill. 123751 8/23/33	11 Buick Chicago
12	Ford Tudor Sedan	3809716					Ohio C-53830 42-94 Toledo. (Accompant of Car	

By	Subject	'33 License	Name	'34 License	Name	Description
William B. Lohman, 1159 Van Ness Ave., San Francisco		Cal. 7-H-5762	William B. Lohman			'33 model - 12 cylind (brilliant blue) gray wheels - spares in fr colored) - 7-576-1623
R.E.Davis Hotel Anderson Reno		Nev. 1458 2/8/33 Title #4553	R.E.Davis Hotel Anderson Reno			32-37 model - dark gr spares in fender well
T.C.Blackburn 4214 W.Lockwood (vacant lot) Toledo, Ohio		Ohio C-25783 9/28/33 Title #352730	T.C.Blackburn 4214 W.Lockwood (vacant lot) Toledo, Ohio			'33-91 model - built wheels
		Ohio C-25771 9/26/33 Minn. 473-569	T.C.Blackburn 4214 W.Lockwood Toledo			
H.J.Harvey Hotel Anderson Reno		Nev. 1283 1/9/33	H.J.Harvey Hotel Anderson Reno			dark blue body - six wells - brown mohair
E.V.Davis		Ill. 1-246-602 7/31/33 Minn. B-473569 10/9/33	E.V.Davis P.O.Box 322 Grayslake E.V.Davis P.O.Box 52 Lakerville			'33 model
		Ill. 774267 4/17/33	E.V.Davis 2408 Crawford Ave., Chicago	Minn. B-45372 1/11/34 not delivered	E.V.Davis P.O.Box 254 White Bear Lake	
		Nev. 7985 12/2/34	E.L.Burnes 334geway Apt.#20 Reno, Nevada 591 W. 7th, St.Paul, Minn. (fict.)			
				Minn. B-75038 not delivered	E.L.Murray P.O.Box 345 White Bear Lake	
E. L. Burnes		Calif. 2-H-8661 2/9/33	E.L.Burnes 3870 California St. San Francisco			Sport sedan - 15" maroon colored - upholstery - U. wheels - trunk r wells-maroon met
HP-John H.Montgomery 3206 W.Jackson Blvd. Chicago		Ill. 1237051 8/23/33	William Lohman 3453 W.Jackson Blvd. Chicago			
		Ohio C-53830	C.W.Woods 4209 1/2 W.Lockwood Toledo, Ohio. (Accompanied by purchaser of Car #4)			

'34 License	Name	Description	Remarks
		'33 model - 12 cylinder - blue body - Yankee blue - (brilliant blue) gray hood - canvas top - six wire wheels - spares in front fender wells - (wheels cream colored) - 7-576-1623	
		'32-57 model - dark green body - six wire wheels - two spares in fender wells	
		'33-91 model - built in trunk on rear- six wire wheels	To Calif. from Reno 11/17/33- returned 11/27/33 by Fred Barker using alias F.C. Blackburn
			To Calif. from Reno 10/25/33 George L. Martin
		dark blue body- six wire wheels - two spares in fender wells - brown mohair upholstery	
		'33 model	Seen in Reno, September and November 1933 in possession of subjects
Minn. B-45372 1/11/34 not delivered	E.V. Davis P.O. Box 254 White Bear Lake		
			'32 Minn B-158031 E.L. Burns-same add
Minn. B-75038 not delivered	E.L. Murrey P.O. Box 345 White Bear Lake	Sport sedan -'57" model-deluxe 7-576-1611 (3) maroon colored - body and top - light brown upholstery - U. S. Royal tires - six wire wheels - trunk rack on back - two fender wells-maroon metal covers	Out-of-State permit obtained Feb. 1933 by E. L. Burns Ridgeway Apts. Reno

Car No.	Make of Car	Motor No.	Purchased Where:	When:	By:	Subject:	'33 License and date obtained	Name
1	Auburn Sedan	EB-1527	San Francisco, Auburn Calif. Co., 1625 Van Ness Ave.	10/9/33	William B. Lohman, 1159 Van Ness Ave., San Francisco	A. J. Barker	Cal. 7-H-5762	William B. Lohman
2	Buick Sedan	2797868 2647365 (Serial)	Reno - with new \$500 bills	1/11/33	E. E. Davis, Hotel Anderson, Reno	F. Barker	Nev. 1488 2/8/33 Title #4553	E. E. Davis, Hotel Anderson, Reno
3	Buick Sedan	2858090 2703063 (Serial)	Toledo, Ohio F. E. Anderson 3900 Summit St. See 7-576-1707-3 for lead Chicago	9/27/33	T. C. Blackburn, 4214 W. Lockwood (vacant lot), Toledo, Ohio		Ohio C-25783 9/28/33 Title #352730	T. C. Blackburn, 4214 W. Lockwood (vacant lot), Toledo, Ohio
4	Ford V-8 Sedan	18493080	Toledo Lyman D. Arnold 1002 Adams St.	9/15/33			Ohio C-25771 9/26/33 Minn. 473-569	T. C. Blackburn, 4214 W. Lockwood, Toledo
5	Pontiac Sedan	885160 770178 (Serial)	Reno with new \$500 (2)	1/9/33	H. J. Harvey, Hotel Anderson, Reno		Nev. 1283 1/9/33	H. J. Harvey, Hotel Anderson, Reno
6	Ford V-8 Deluxe Coupe	328420		6/27/33	E. V. Davis		Ill. 1-246-602 7/31/33 Minn. 473569 10/9/33	E. V. Davis, P.O. Box 1, Graylake E. V. Davis, P.O. Box 5, Lakeville
7	Chevrolet Sedan	3554674 1-CAD23077 (Serial)	old 6-20-34 to Vern. Motor Co. 5100 W. 25th St. Chicago revised to The Bugle (B-11) 5100 W. 25th St. Chicago	4/15/33			Ill. 774267 4/17/33 Title #6 - 7-19-33	E. V. Davis, 2408 Crawford Ave., Chicago
8	Plymouth Sedan This car traded in on #10	PB-81821 (now 8181) 175709 (Serial)					Nev. 7985 12/2/34	E. L. Burnes, Highway 4, Reno, Nevada, 591 W. 7th, St. Paul, Minn. (fict.)
9	Ford V-8 Deluxe Coupe	18 304 794						
10	Graham-Paige	1024021 10181956 (Chassis #)	San Francisco - Graham-Paige Co. 1665 Van Ness St.	2/8/33	E. L. Burnes		Calif. 2-H-8661 2/9/33	E. L. Burnes, 3870 Calif. St., San Francisco
11	Dodge Sedan Traded in on #1	MP 65246		8/21/33	MP John H. Montgomery, 3206 W. Jackson Blvd., Chicago		Ill. 1237051 8/23/33	William L. 3455 W. 14th, Chicago
12	Ford Tudor Sedan	3809716					Ohio C-53830	C. W. Woods, 4209 1/2 N. 1, Toledo, Ohio (Accompanied of Car #)

	Subject:	'33 License and date obtained	Name:		'34 License:	Name:	Description
B. in Hess in Francisco	A. J. [unclear] Davis	Cal. 7-H-5762	William B. Lohman (Ave. 31)				'33 model - 12 cylinder - blue body (brilliant blue) gray hood - canvas wheels - spares in front fender well colored) - 7-576-1623
is Anderson	F. Barker	Nov. 1933 2/8/33 Title #4553	R. E. Davis Hotel Anderson Reno				32-37 model - dark green body - spares in fender wells
ckburn Lockwood lot) - Chicago		Ohio C-25783 9/28/33 Title #352730	T. C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio				'33-31 model - built in trunk on wheels
		Ohio C-25771 9/26/33 Minn. 473-569	T. C. Blackburn 4214 N. Lockwood Toledo				
vey Anderson		Nov. 1283 1/9/33	H. J. Harvey Hotel Anderson Reno				dark blue body - six wire wheels - wells - brown mohair upholstery
is		Ill. 1-246-602 7/31/33 Minn. B-473569 10/9/33	E. V. Davis P.O. Box 322 Grayslake E. V. Davis P.O. Box 52 Lakewood				'33 model
		Ill. 774267 4/17/33 Transferred to Ill. #6 - 7-11-33	E. V. Davis 2408 Crawford Ave., Chicago		Minn. B-45372 1/11/34 (intercepted - not delivered	E. V. Davis P.O. Box 254 White Bear Lake	
		Nov. 7985 12/2/34	E. L. Burnes Bridgeway Apt. #20 Reno, Nevada 591 W. 7th, St. Paul, Minn. (fict.)				
					Minn. B-75038 intercepted - not delivered	E. L. Murrey P.O. Box 345 White Bear Lake	
urnes		Calif. 2-H-8661 2/9/33	E. L. Burnes 3870 California St. San Francisco				Sport sedan - '57" model - deluxe maroon colored - body and top - upholstery - U. S. Royal tires - wheels - trunk rack on back - wells - maroon metal covers
H. Montgomery V. Jackson Blvd. Chicago		Ill. 1237051 8/23/33	William Lohman 3453 W. Jackson Blvd. Chicago				
		Ohio C-53830	C. W. Woods 42094 N. Lockwood Toledo, Ohio. (accompanied by purchaser of car #4)				

License	Name	Description	Remarks
		'33 model - 12 cylinder - blue body - Yanksee blue - (brilliant blue) gray hood - canvas top - six wire wheels - spares in front fender wells - (wheels cream colored) - 7-576-1623	
		'32-37 model - dark green body - six wire wheels - two spares in fender wells	
		'33-39 model - built in trunk on rear - six wire wheels	To Calif. from Reno 11/17/33 - returned 11/27/33 by Fred Barker using alias T.O. Blackburn
			To Calif. from Reno 10/25/33 George L. Martin
		dark blue body - six wire wheels - two spares in fender wells - brown mohair upholstery	
		'33 model	Seen in Reno, September and November 1933 in possession of subjects
inn. B-45372 1/11/34 not delivered	E.V. Davis P.O. Box 254 White Bear Lake		
			'32 Minn B-158081 E.L. Burnes - same address
inn. B-75038 not delivered	E.L. Murrey P.O. Box 345 White Bear Lake		
		Sport sedan - '57" model - deluxe 7-576-1611 (3) maroon colored - body and top - light brown upholstery - U. S. Royal tires - six wire wheels - trunk rack on back - two fender wells - maroon metal covers	Out-of-State permit obtained Feb. 1933 by E. L. Burnes Ridgeway Apts. Reno

Car No.	Make of Car	Motor No.	Purchased Where	When	By	Subject	1933 License	Name
1	Auburn Sedan	HB-1527	San Francisco Auburn Calif. Co., 1625 Van Ness Ave.	10/9/33	William B. Lohman, 1159 Van Ness Ave., San Francisco		Cal. 7-F-576	William B. Lohman
2	Buick Sedan	2797868 26-7365 (Serial)	Reno - with new \$500 bills	1/11/33	R.E. Davis Hotel Anderson Reno		Nev. 1448 2/8/33 4-553	R.E. Davis Hotel Anderson Reno
3	Buick Sedan	2858090 2733053 (Serial)	Toledo, Ohio P.F. Anderson 3900 Summit St. See 7-576-1707-3 for lead Chicago	9/27/33	T.C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio		Ohio C-25783 9/28/33 Title #352730	T.C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio
4	Ford V-8 Sedan	18-93 80	Toledo Lyman D. Arnold 1002 Adams St.	9/15/33			Ohio C-25771 9/26/33 Minn. 473-569	T.C. Blackburn 4214 N. Lockwood Toledo
5	Pontiac Sedan	835160 770178 (Serial)	Reno with new \$500 (2)	1/9/33	H.J. Harvey Hotel Anderson Reno		Nev. 1283 1/9/33	H.J. Harvey Hotel Anderson Reno
6	Ford V-8 DeLuxe Coupe	322420		6/27/33	E.V. Davis		Ill. 1-244-652 7/31/33 Minn. B-473569 10/9/33	E.V. Davis P.O. Box 322 Graylake E.V. Davis P.O. Box 52 Lakerville
7	Chevrolet Sedan	3554674 1-CAD23077 (Serial)		4/15/33			Ill. 774267 4/17/33	E.V. Davis 2408 Crawford Ave., Chicago
8	Plymouth Sedan	PR-81321 (now 8131) 175793 (Serial)					Nev. 7985 12/2/34	E.L. Burnes Ridgeway Apt. #20 Reno, Nevada 531 W. 7th, St. Paul, Minn. (first.)
9	Ford V-8 DeLuxe Coupe	18 32-734						
10	Graham-Paige	110421 1-2113 (Chassis #)	San Francisco Graham-Paige Co. 1605 Van Ness St.	2/8/33	E. L. Burnes		Calif. 2-H-8061 2/9/33	E.L. Burnes 387 California St. San Francisco
11	Dodge Sedan Traded in on #1	DP 65846		8/21/33	MP-John H. Montgomery 3208 W. Jackson Blvd. Chicago		Ill. 1237051 8/23/33	William Lohman 3453 W. Jackson Blvd. Chicago
12	Ford Tudor Sedan	3809716					Ohio C-53830	C.W. Woods 4209 N. Lockwood Toledo, Ohio. (Accompanied by purch. of Car #4)

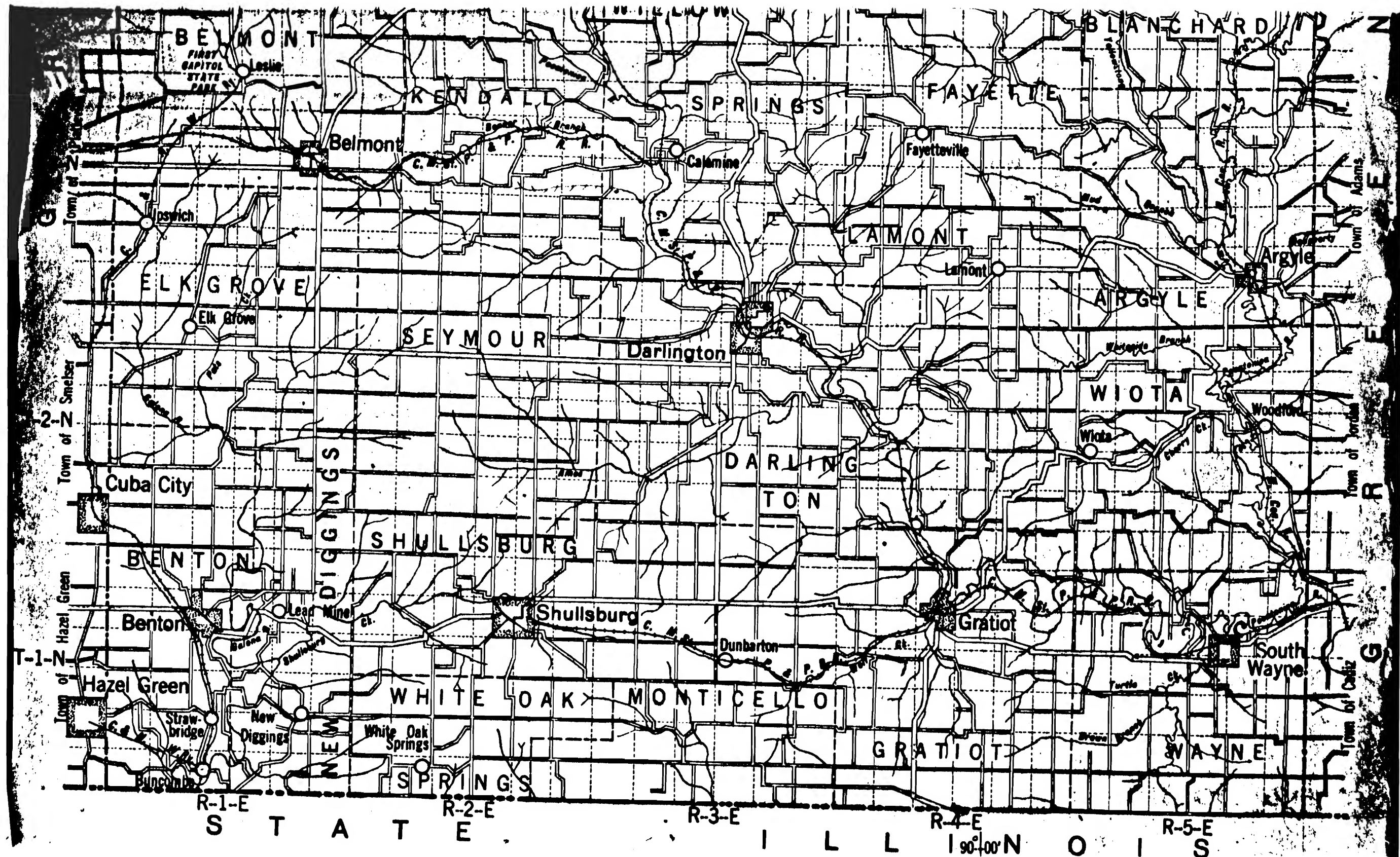
Purchased Where	When	By	Subject	'33 License	Name	'34 License	Name
San Francisco Auburn Calif. Co., 1625 Van Ness Ave.	10/9/33	William B. Lohman, 1159 Van Ness Ave., San Francisco		Cal. 7-R-5762	William B. Lohman		
Reno - with serial) new \$500 bills	1/11/33	R.F. Davis Hotel Anderson Reno		Nev. 1488 2/8/33 #4553	R.F. Davis Hotel Anderson Reno		
Toledo, Ohio ad) F.F. Anderson 3900 Summit St. See 7-576-1767-3 for lead Chicago	9/27/33	T.C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio		Ohio C-25783 9/28/33 Title #352730	T.C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio		
Toledo Lynman D. Arnold 1002 Adams St.	9/14/33			Ohio C-25771 9/26/33 Minn. 473-569	T.C. Blackburn 4214 N. Lockwood Toledo		
Reno 1) with new \$500 (2)	1/9/33	H.J. Harvey Hotel Anderson Reno		Nev. 1283 1/9/33	H.J. Harvey Hotel Anderson Reno		
	7/27/33	E.V. Davis		Ill. 1-246-602 7/31/33 Minn. B-473569 10/9/33	E.V. Davis P.O. Box 322 Graylake E.V. Davis P.O. Box 52 Lakeville		
erial)	4-15/33			Ill. 774267 4/17/33 Minn. B-45372 1/11/34 not delivered	E.V. Davis 2408 Crawford Ave., Chicago E.V. Davis P.O. Box 254 White Bear Lake		
* 8181) al)				Nev. 7985 12/2/34	E.L. Burnes Ridgeway Apt. #20 Reno, Nevada 591 W. 7th. St. Paul, Minn. (fict.)		
						Minn. B-75033	E.L. Murrey P.O. Box 345 White Bear Lake
San Francisco asis #) - Graham-Palmer Co. 1645 Van Ness St.	2/8/33	E. L. Burnes		Calif. 2-H-8661- 2/9/33	E.L. Burnes 3870 California St. San Francisco		
	8/21/33	MP-John H. Montgomery 3206 W. Jackson Blvd. Chicago		Ill. 1237051 8/23/33	William Lohman 3453 W. Jackson Blvd. Chicago		
						Ohio C-53830	C.W. Woods 4209 N. Lockwood Toledo, Ohio. (Accompanied by purchaser of Car #4)

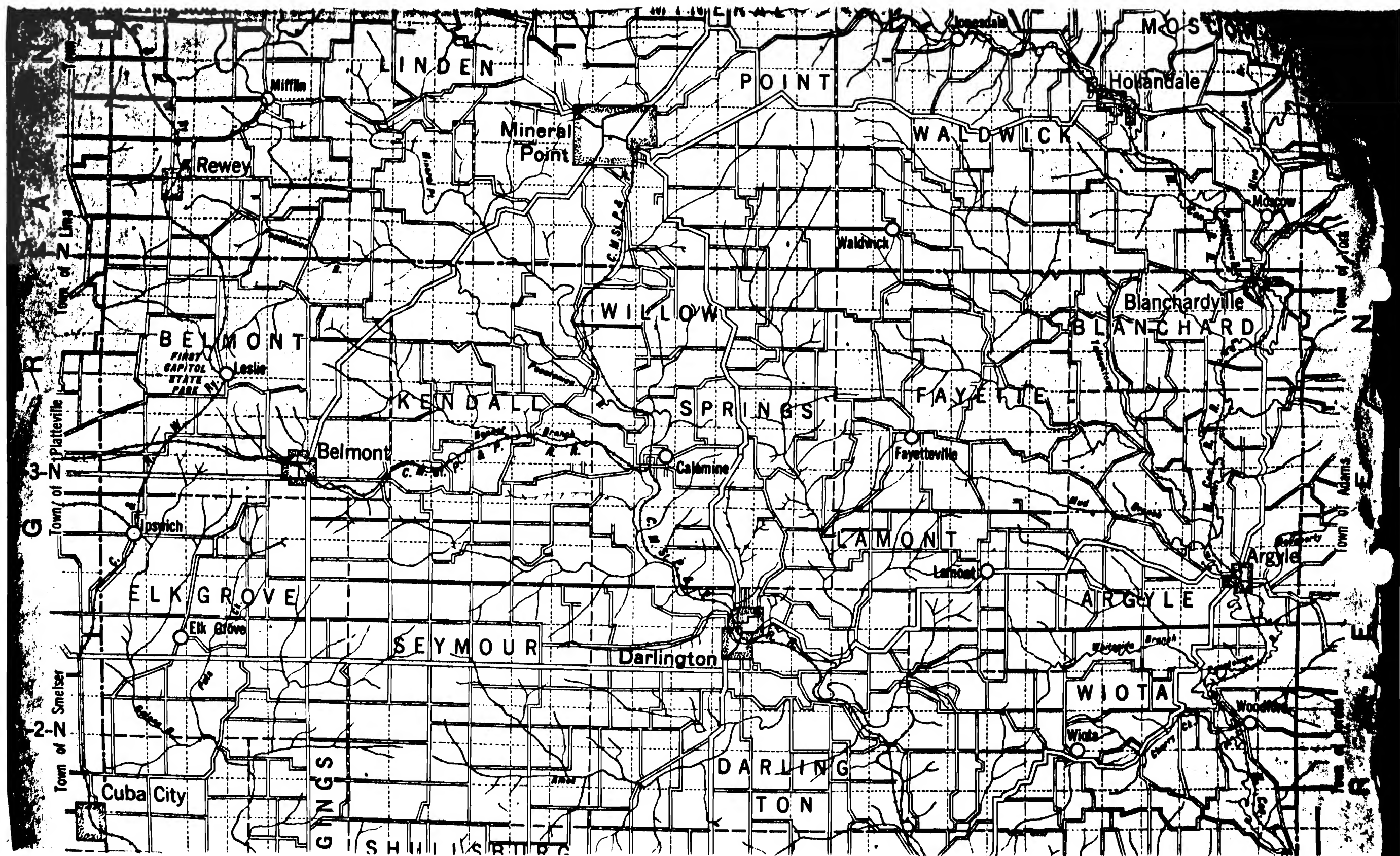
License	Name	Description	Remarks
		'33 model - 12 cylinder - blue body - Yankee blue - (brilliant blue) gray hood - canvas top - six wire wheels - spares in front fender wells - (wheels cream colored) - 7-576-1623	
		32-37 model - dark green body - six wire wheels - two spares in fender wells	
		'33-91 model - built in trunk on rear- six wire wheels	To Calif. from Reno 11/17/33- returned 11/27/33 by Fred Barker using alias F.C. Blackburn
			To Calif. from Reno 10/25/33 George L. Martin
		dark blue body- six wire wheels - two spares in fender wells - brown mohair upholstery	
		'33 model	Seen in Reno, September and November 1933 in possession of subjects
Minn. B-45372 1/11/34 White Bear Lake	E.V. Davis P.O. Box 254 White Bear Lake		
			'32 Minn B-158081 E.L. Burnes-same address
Minn. B-75035	E.L. Murrey P.O. Box 345 White Bear Lake	Sport sedan - '57" model-deluxe 7-576-1611 (3) maroon colored - body and top - light brown upholstery - U. S. Royal tires - six wire wheels - trunk rack on back - two fender wells-maroon metal covers	Out-of-State permit obtained Feb. 1933 by E. L. Burnes Ridgeway Apts. Reno

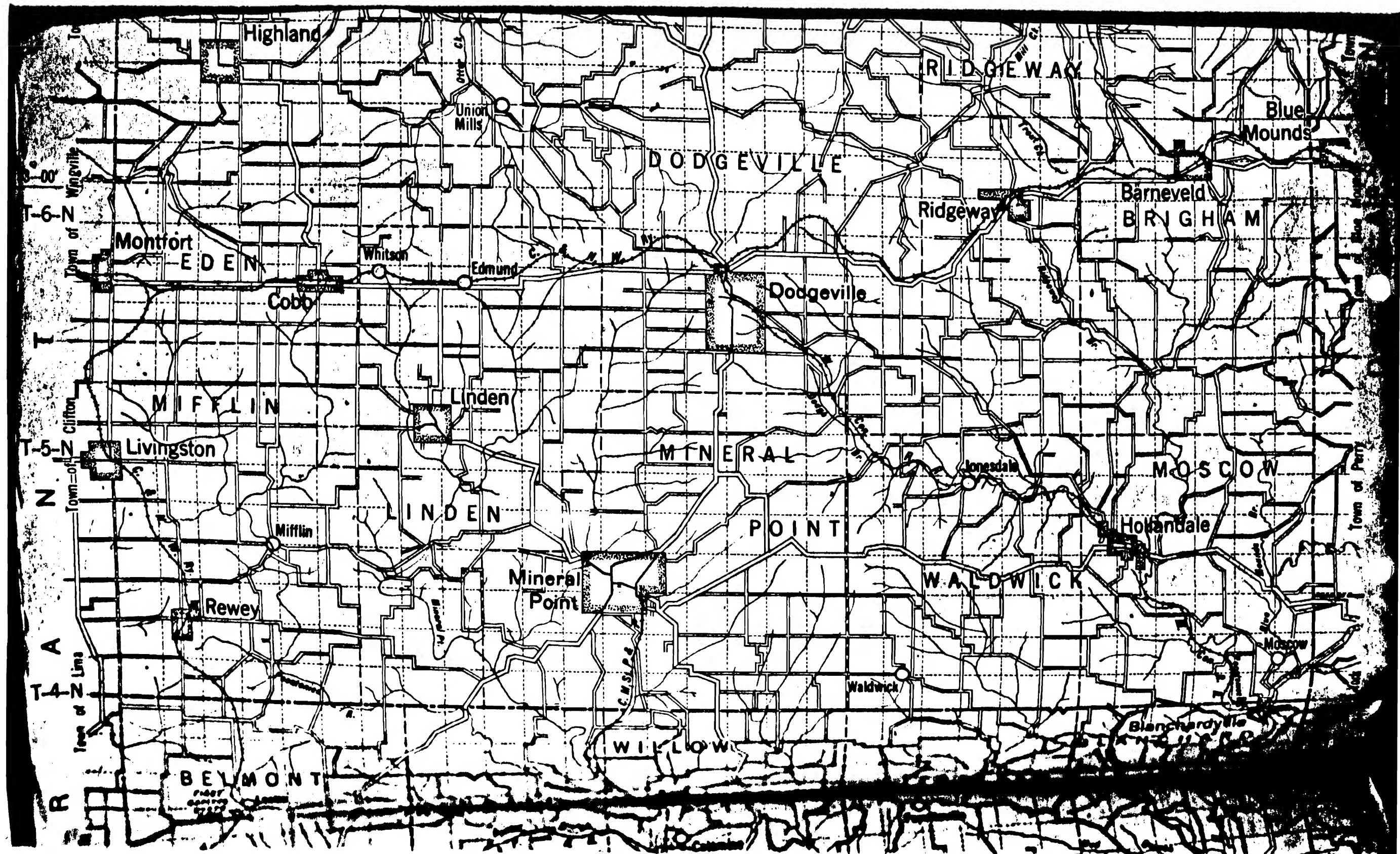
Car No.	Make of Car	Motor No.	Purchased Where	When	By	Subject	License	Name
1	Auburn Sedan	HB-1527	San Francisco Auburn Calif. Co., 1625 Van Ness Ave.	10/9/33	William B. Lohman, 1159 Van Ness Ave., San Francisco		Cal. 7-5752	William B. Lohman
2	Buick Sedan	2797368 26-7365 (Serial)	Reno - with new \$500 bills	1/11/33	R.E. Davis Hotel Anderson Reno		Nev. 1488 2/3/33 4-53	R.E. Davis Hotel Anderson Reno
3	Buick Sedan	2852090 2753063 (Serial)	Toledo, Ohio F.Y. Anderson 1300 Summit St. See 7-576-1707-3 for lead Chicago	9/27/33	T.C. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio.		Ohio 2-25783 9/28/33 Title #342730	T.C. Blackburn 4214 N. Lockwood Toledo, Ohio
4	Ford V-8 Sedan	18-93060	Toledo Lyman D. Arnold 1002 Adams St.	9/15/33			Ohio 2-25771 9/26/33 Minn. 473-569	T.C. Blackburn 4214 N. Lockwood Toledo
5	Pontiac Sedan	585160 770178 (Serial)	Reno with new \$500 (2)	1/9/33	H.J. Harvey Hotel Anderson Reno		Nev. 1283 1/9/33	H.J. Harvey Hotel Anderson Reno
6	Ford V-8 Deluxe Coupe	328420		6/27/33	E.V. Davis		Ill. 1-246-602 7/31/33 Minn. 473-569 10/9/33	E.V. Davis P.O. Box Oriskany I.V. Davis P.O. Box Lakewood
7	Chevrolet Sedan	3554674 1-CAD23077 (Serial)	LA 4-20-37 Veh. Reg. Co. 5100 W. 12th St. Chicago, Ill.	4/15/33			Ill. 77-267 4/17/33 Minn. 473-569	E.V. Davis 3402 Oak Ave., Chicago Minn. 473-569
8	Plymouth Sedan	PB-51821 (now 5181) 175709 (Serial)					Nev. 7987 12/2/33	E.L. Purser Bilgey Reno, Nev. 591 W. 7th St., Paul (dist.)
9	Ford V-8 Deluxe Coupe	18 304 794						
10	Graham-Paige	1024021 10181956 (Chassis #)	San Francisco Graham-Paige Co. 1665 Van Ness St.	2/8/33	E. L. Burnes		Calif. 2-48661 2/9/33	E. L. Burnes 3577 Cal. St. San Francisco
11	Dodge Sedan Traded in on #1	DP 65846		8/21/33	W.P. John H. Montgomery 3207 W. Jackson Blvd. Chicago		Ill. 1237051 8/23/33	William 3407 W. 7th St. Chicago
12	Ford Tudor Sedan	3809716					Ohio 6-53830	C.E. Wood 4209 E. Toledo, Ohio (Accompany of Car

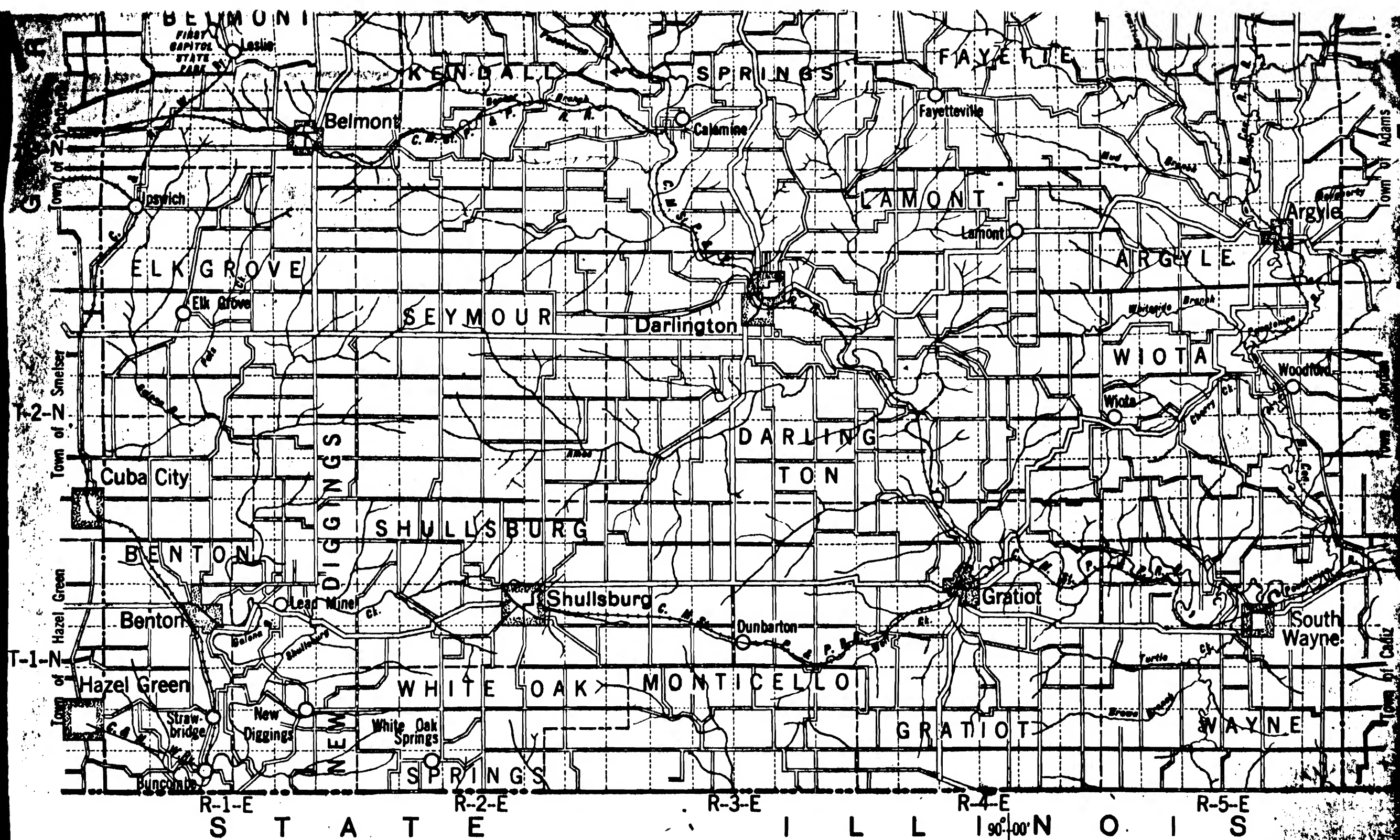
Subject	'33 License	Name	'34 License	Name	Description
San Francisco	Cal. 7-F-5760	William B. Johnson			'33 model - 12 cylinder - blue body (brilliant blue) gray hood - canvas wheels - spares in front fender well colored) - 7-576-1623
San Francisco	Nev. 1478 2/8/33 encl	R.E. Davis Hotel Anderson Reno			'33 Model - dark green body - six spares in fender wells
San Francisco	Ohio C-25723 9/28/33 Title #152730	T.O. Blackburn 4214 N. Lockwood (vacant lot) Toledo, Ohio			'33-31 model - built in trunk on rear wheels
San Francisco	Ohio C-25771 9/26/33 Minn. 473-569	T.O. Blackburn 4214 N. Lockwood Toledo			
San Francisco	Nev. 1283 1/9/33	R.J. Harvey Hotel Anderson Reno			dark blue body - six wire wheels - two wells - brown mohair upholstery
	Ill. 1-246-602 7/31/33 Minn. B-473569 10/9/33	E.V. Davis P.O. Box 322 Crawls Lake E.V. Davis P.O. Box 52 Lakewood			'33 model
	Ill. 774267 4/17/33 Minn. B-473569 10/9/33	E.V. Davis 2408 Crawford Ave., Chicago	Minn. B-5372 1/11/34 White Bear Lake	E.V. Davis P.O. Box 254 White Bear Lake	
	Nev. 7985 12/2/34	E.L. Burnes Hidgeway Apt. #20 Reno, Nevada 591 W. 7th, St. Paul, Minn. (first)			
			Minn. B-75033	E.L. Murray P.O. Box 3-5 White Bear Lake	
	Calif. C-4-2661 2/9/33	E.L. Burnes 3870 California St. San Francisco			Sport sedan - '37 model - deluxe 7-5 maroon colored - body and top - 16 upholstery - U. S. Royal tires - wheels - trunk rack on back - two well - maroon metal covers
San Francisco	Ill. 1237-51 8/21/33	William Lerman 3453 W. Jackson Blvd. Chicago			
	Ohio C-53350	C.W. Woods 4209 N. Lockwood Toledo, Ohio (accompanied by purchaser of Car #4)			

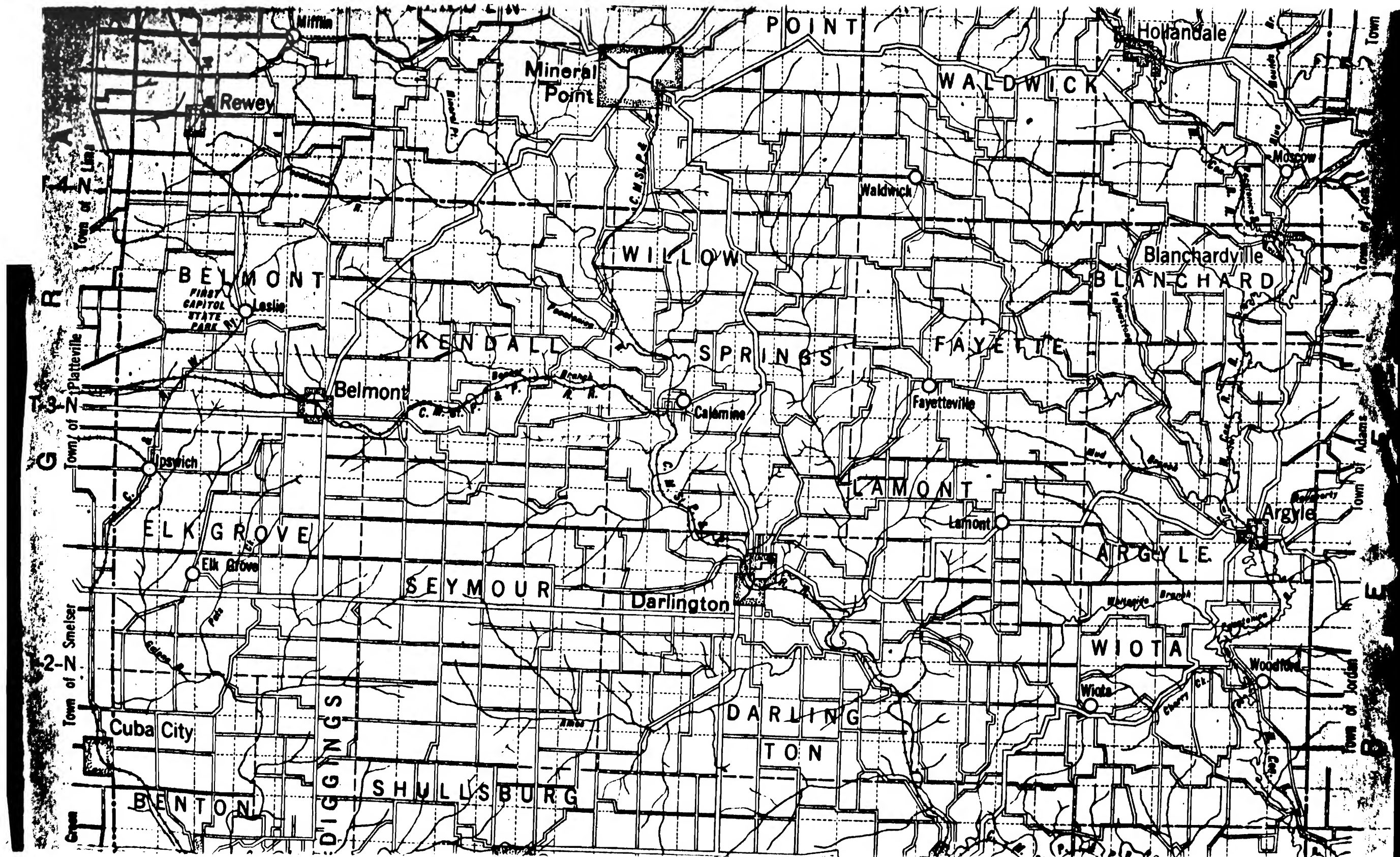
License	Name	Description	Remarks
		'33 model - 12 cylinder - blue body - Yancey blue - (brilliant blue) gray hood - canvas top - six wire wheels - spares in front fender wells - (wheels cream colored) - 7-575-1123	
		'31-37 model - dark green body - six wire wheels - two spares in fender wells	
		'33-39 model - built in trunk on rear - six wire wheels	To Calif. from Reno 11/17/33 - returned 11/27/33 by Fred Barker using alias T.C. Blackburn
			To Calif. from Reno 10/25/33 George L. Martin
		dark blue body - six wire wheels - two spares in fender wells - brown mohair upholstery	
		'33 model	Seen in Reno, September and November 1933 in possession of subjects
B-5372	E.V. Davis P.O. Box 254 White Bear Lake		
			'32 Minn B-158081 E.L. Barnes - same address
B-75537	E.L. Varney P.O. Box 345 White Bear Lake	Sport sedan - '37 model - tel. no 7-575-1511 (3) maroon colored - body and top - light brown upholstery - U. S. Royal tires - six wire wheels - trunk rack on back - two fender wells - maroon metal covers	Out-of-State permit obtained Feb. 1933 by E. L. Barnes Ridgeway Apts. Reno

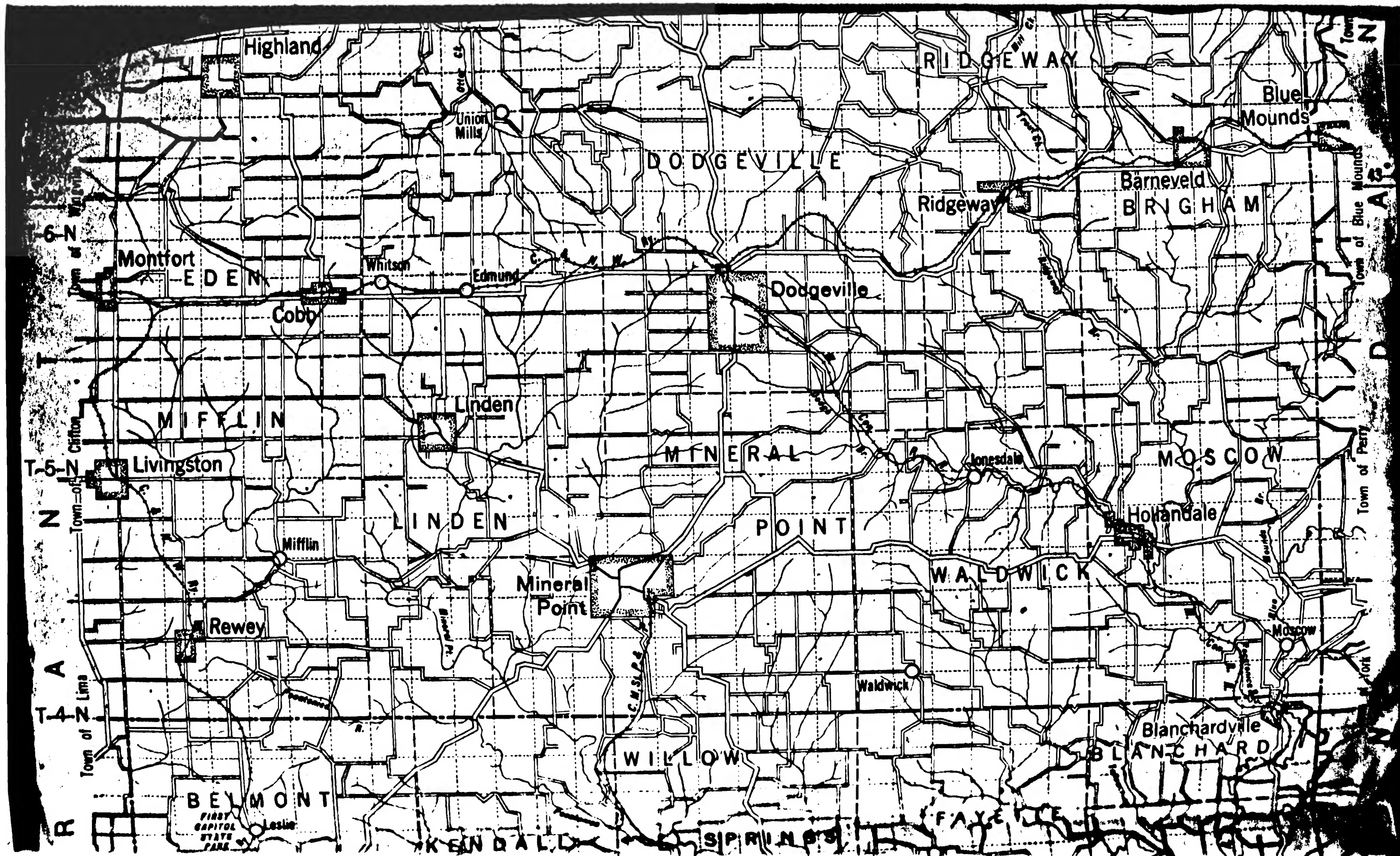


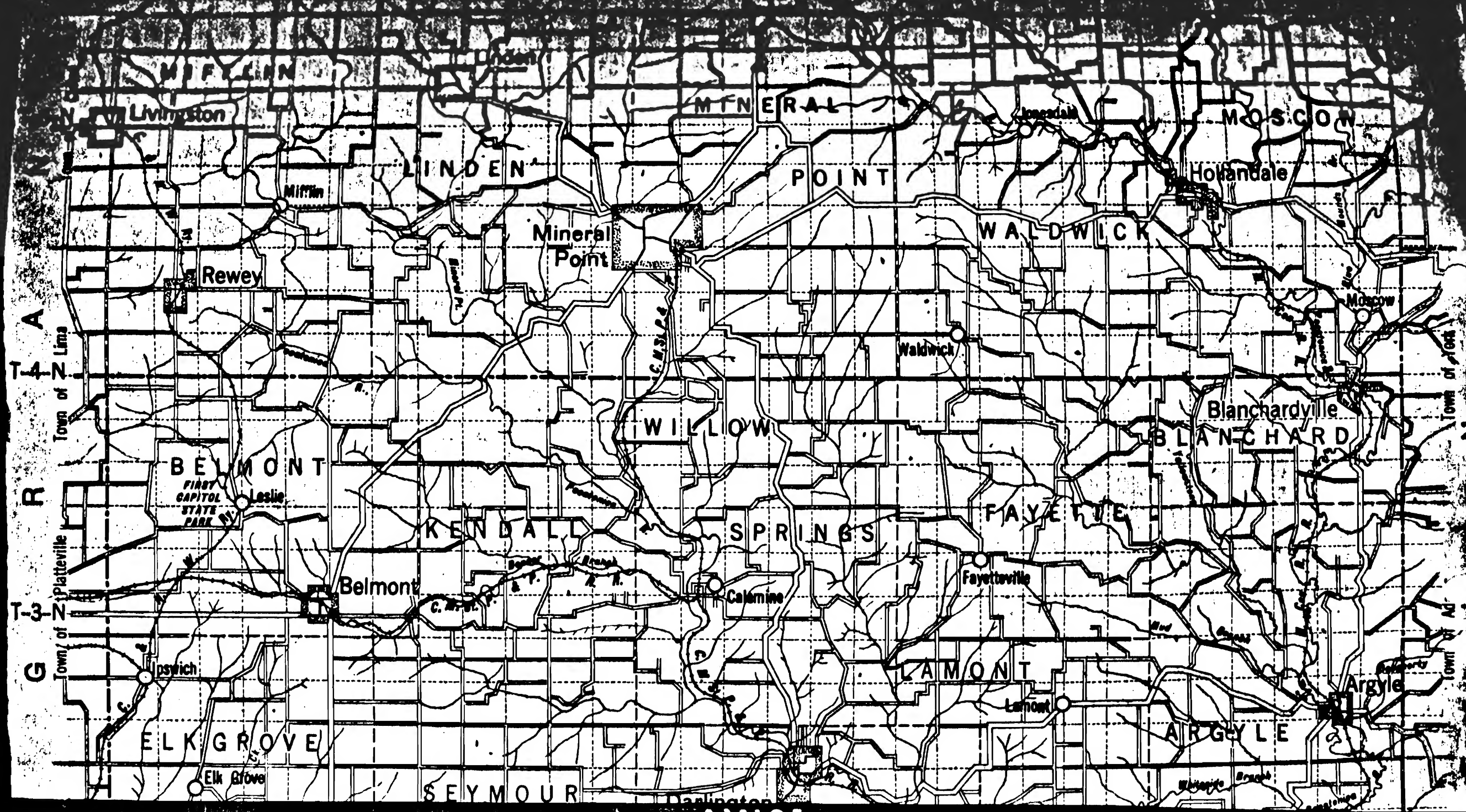




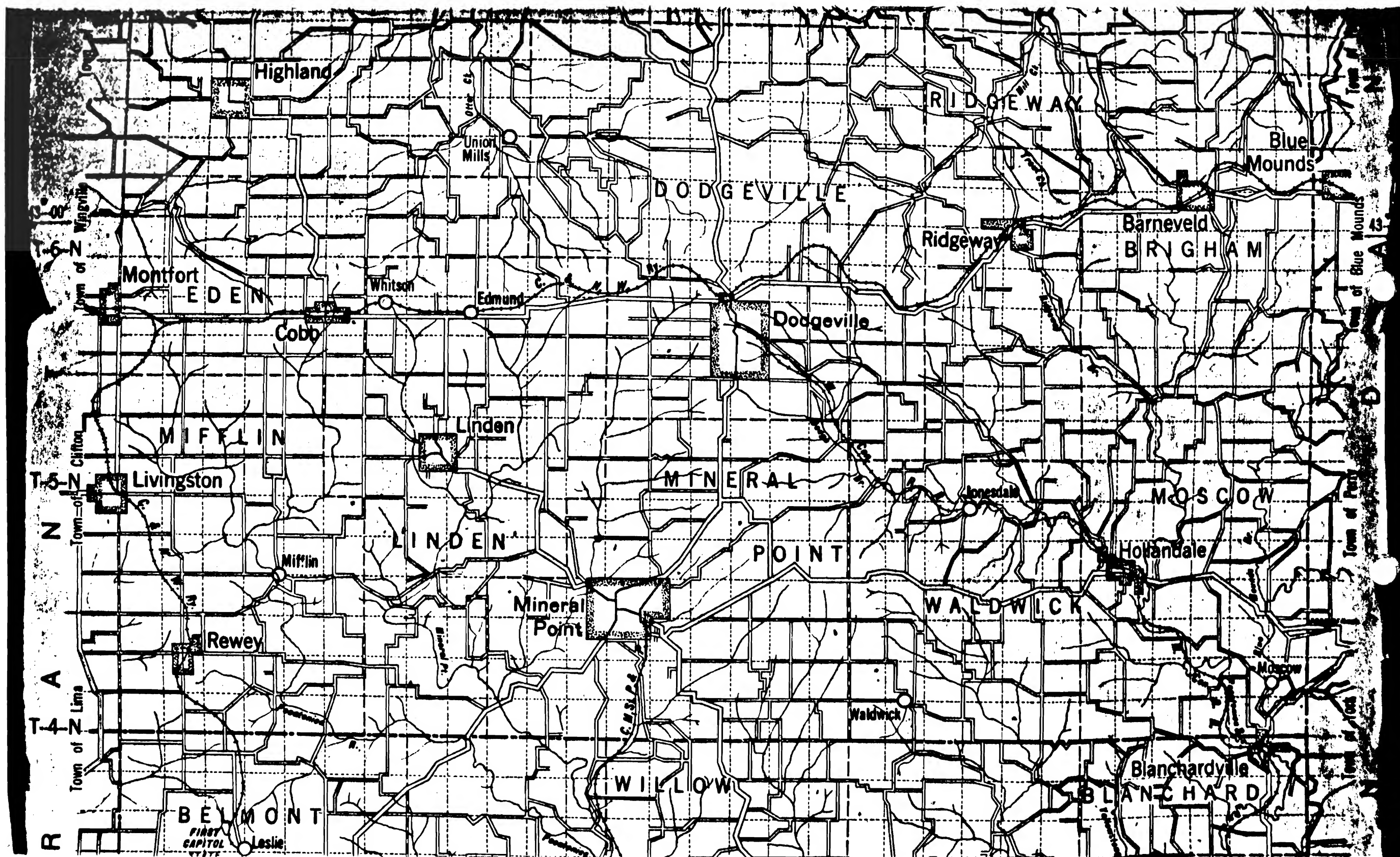


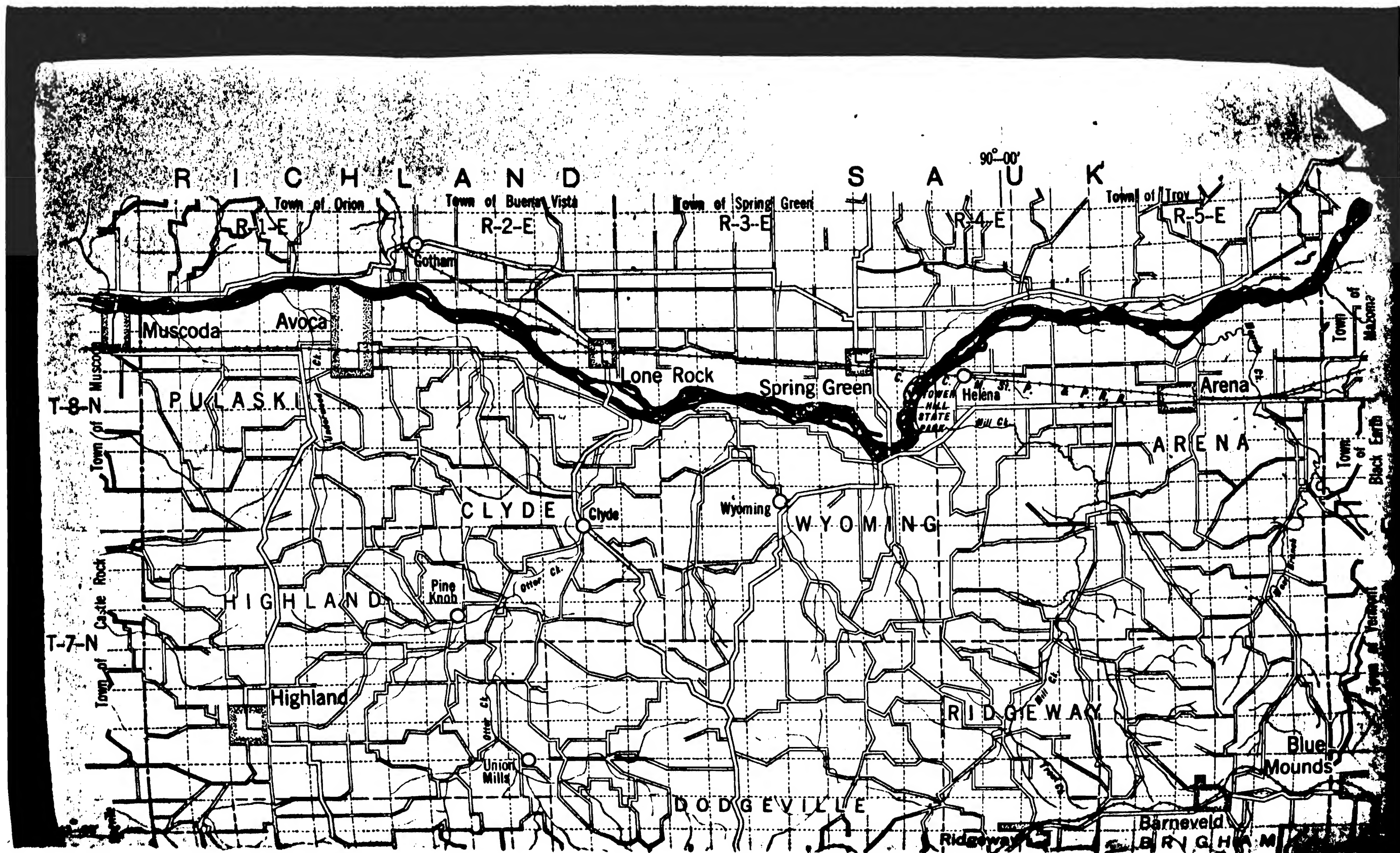


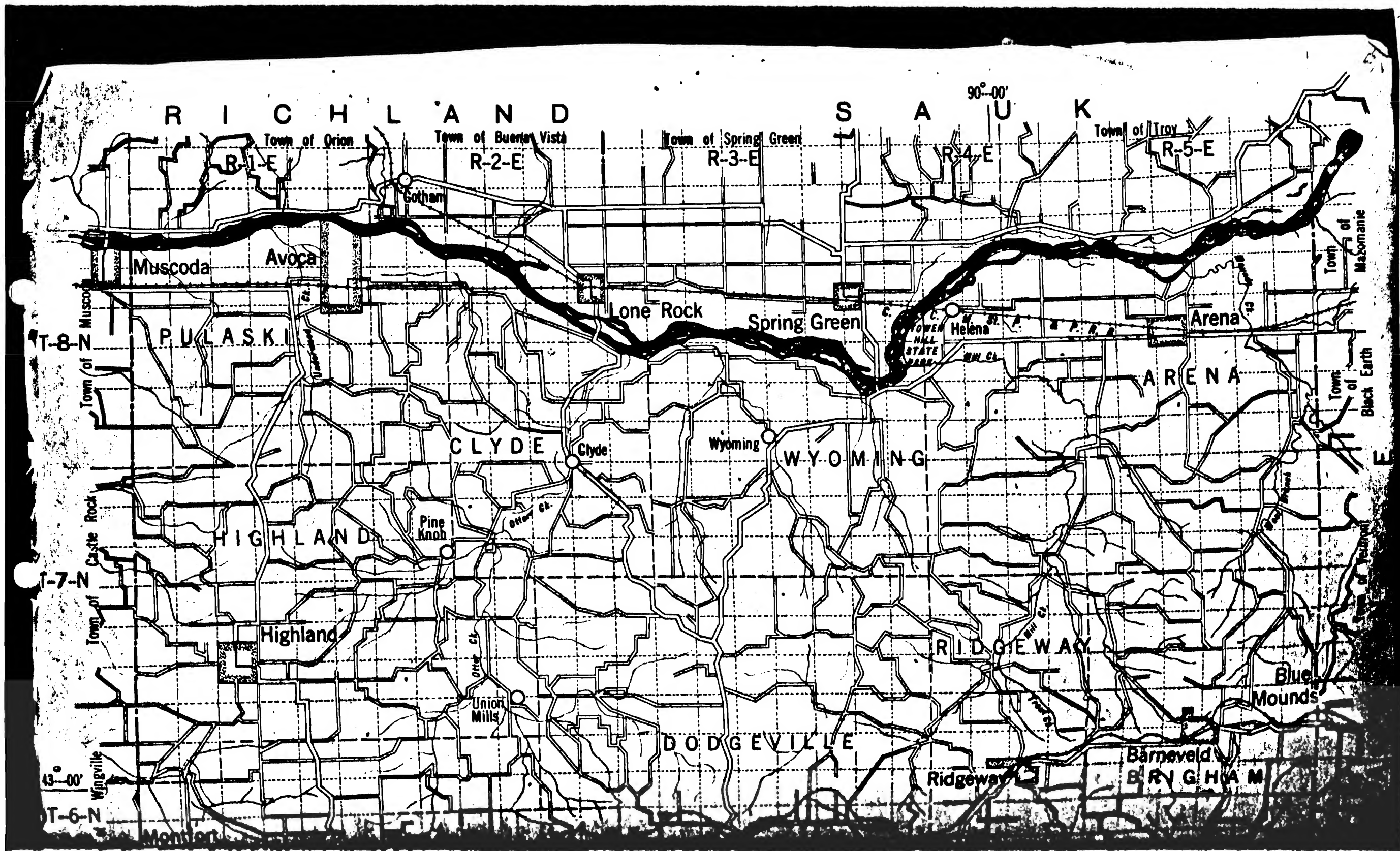


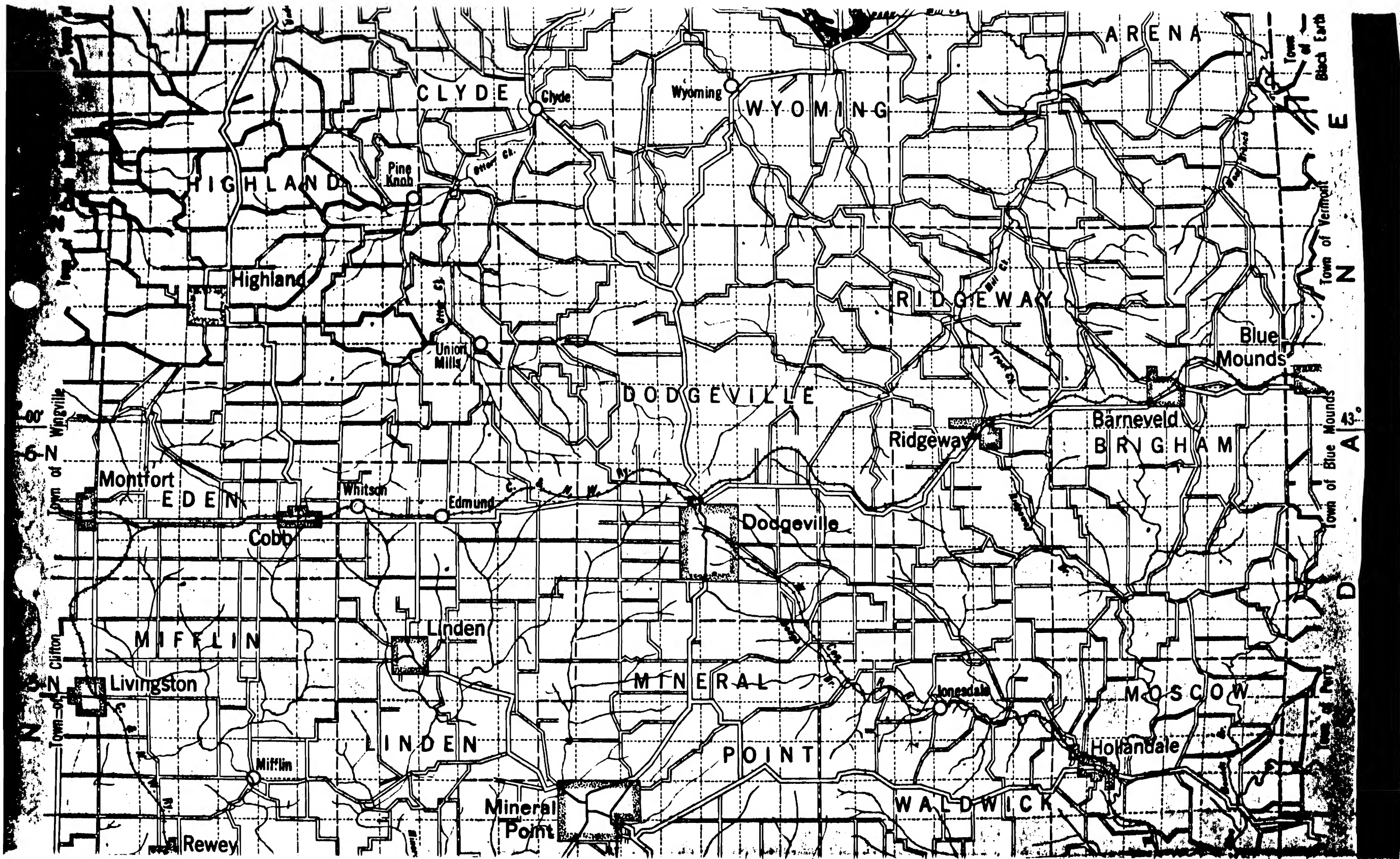


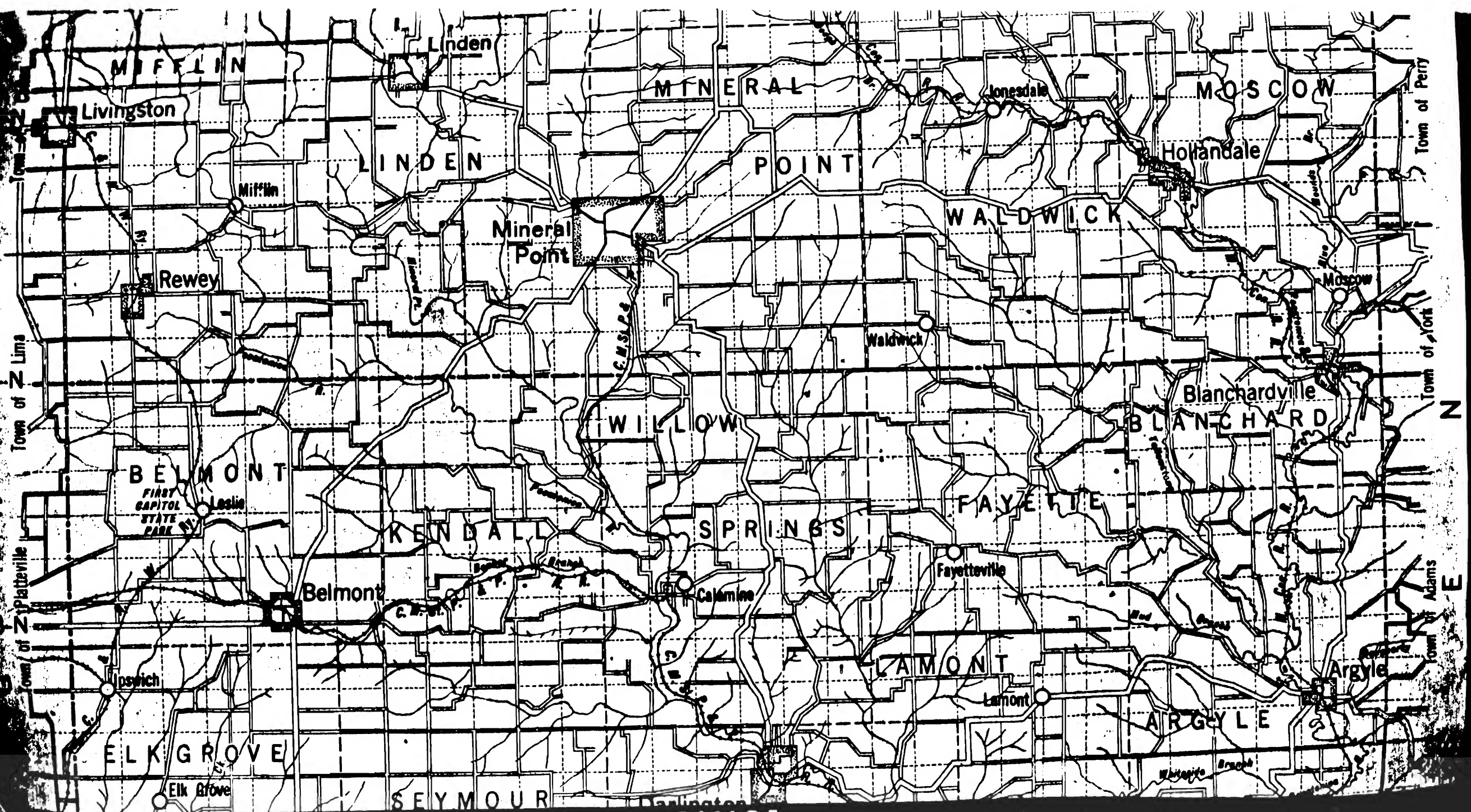
AWOI



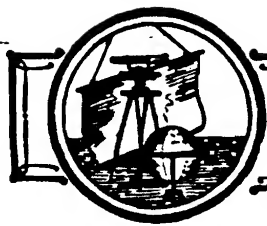








AWOI



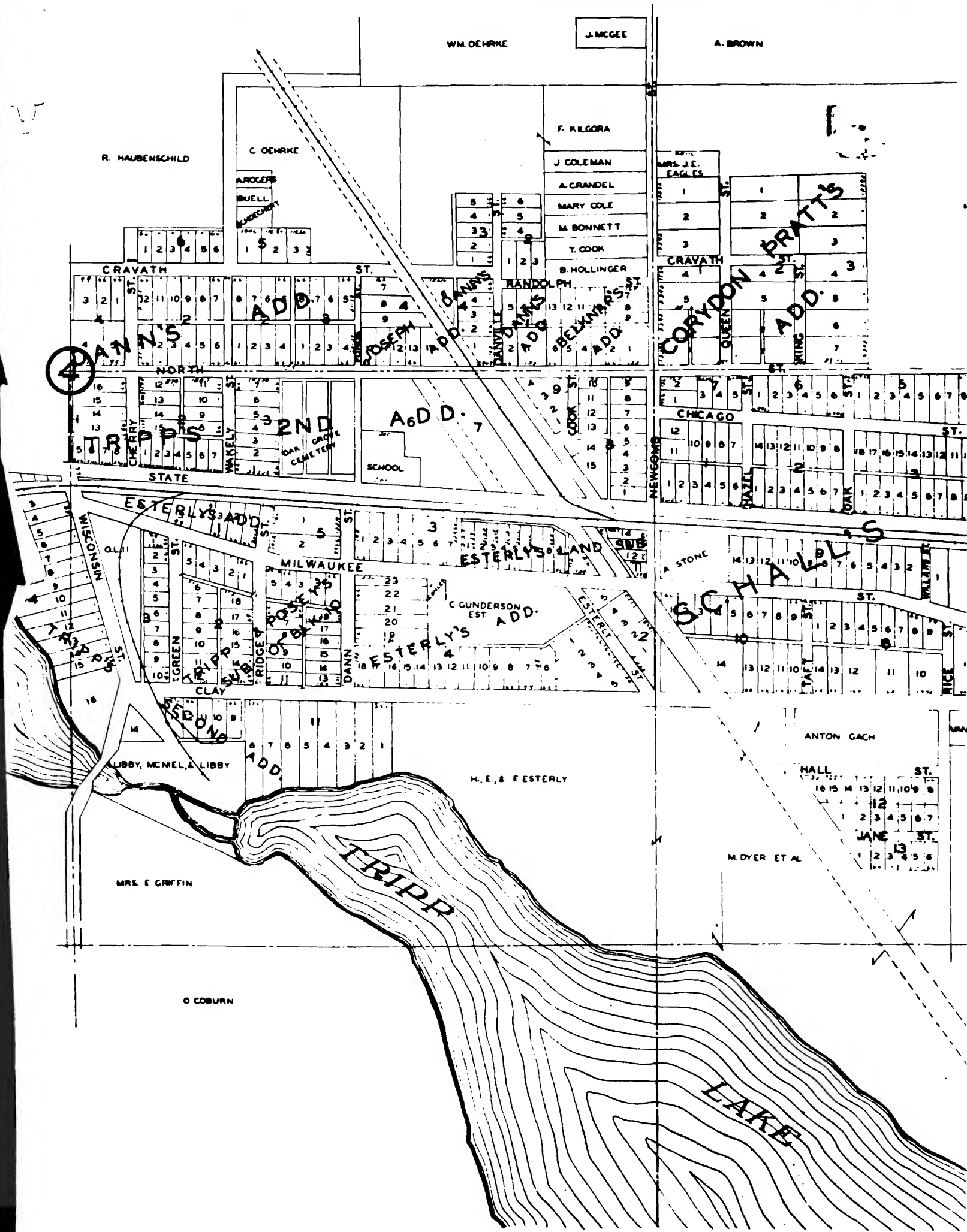
PART OF

WHITEWATER

Town 4 North Parts of Sec. 3 & 4 Range 15 East

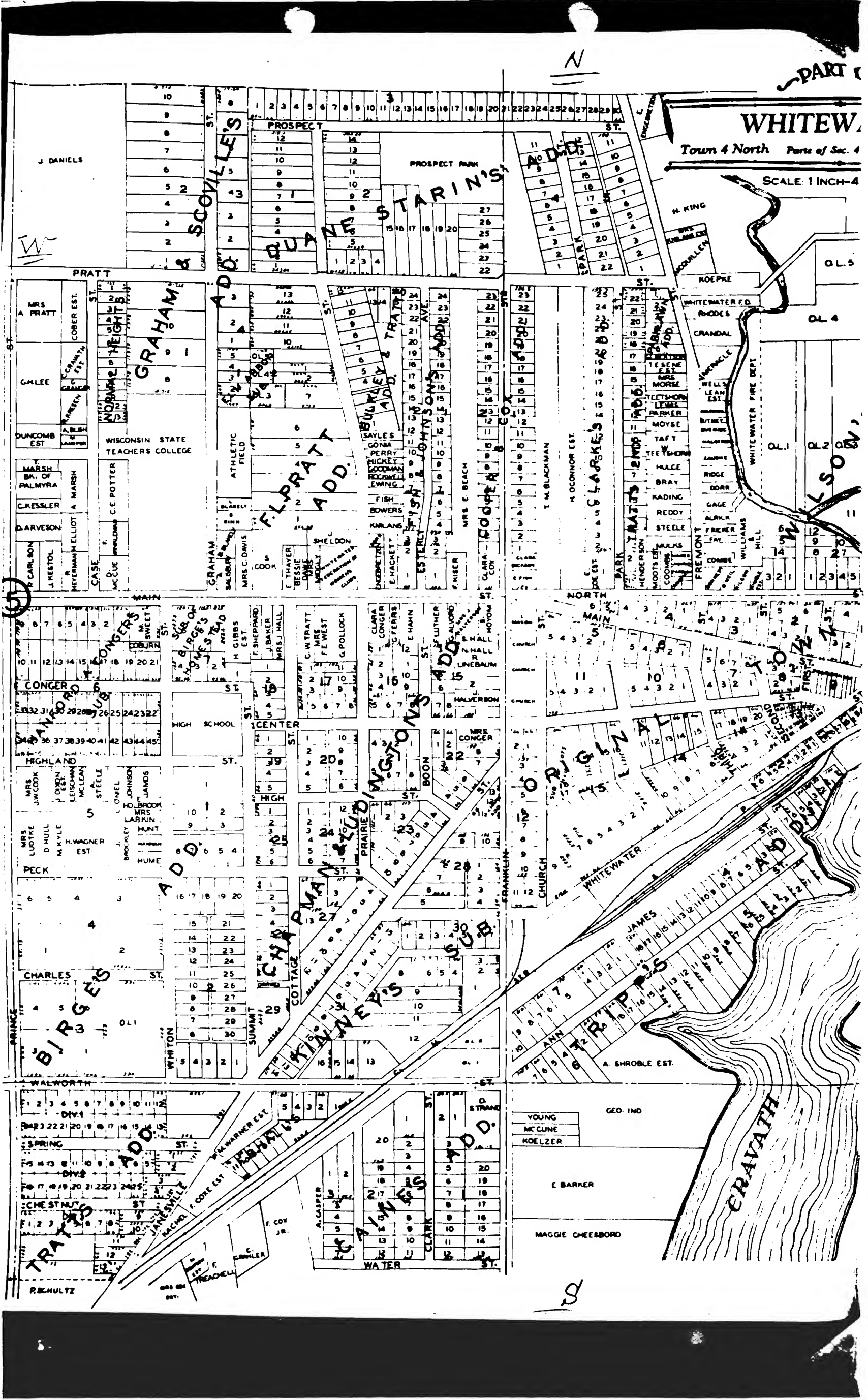


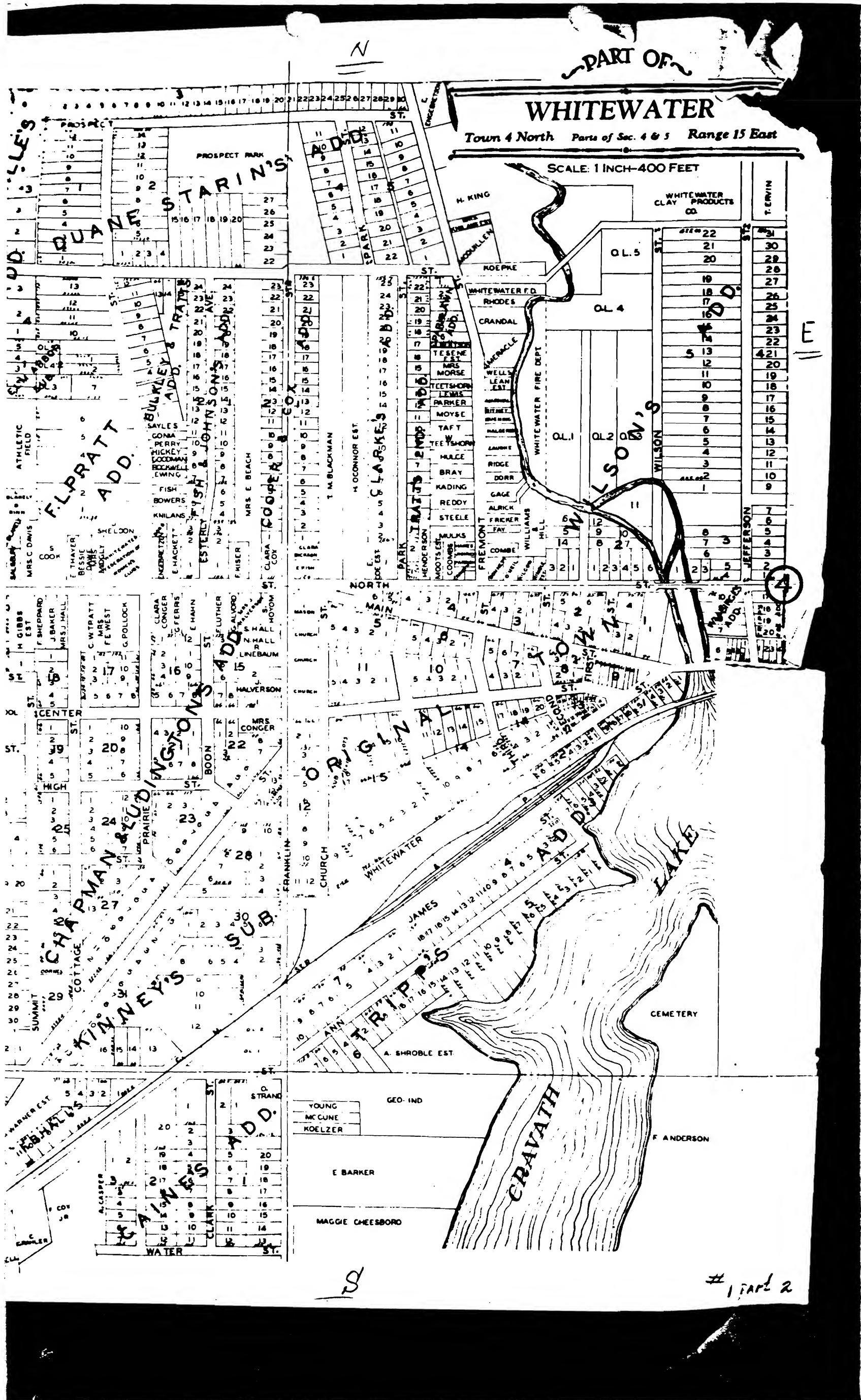
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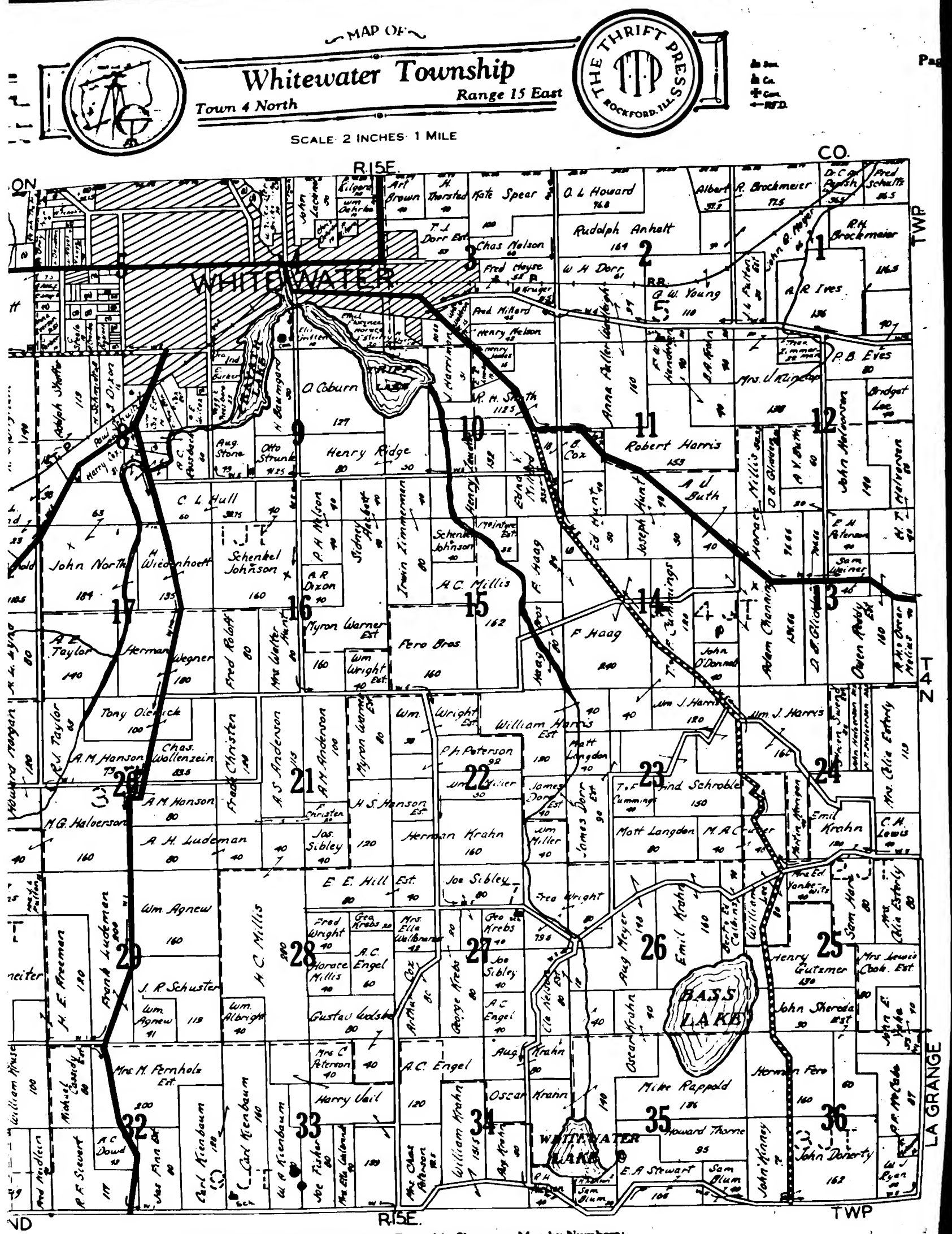


1 Part 1.

S



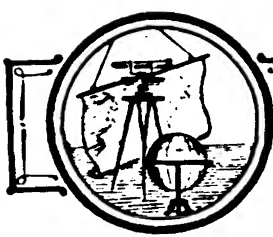




List of Small Property Owners in this Township Shown on Map by Numbers:

No.	Name	Acres	No.	Name	Acres	No.	Name	Acres
1	W. E. Eves	1	11	W. E. Eves	1	21	James O. Darnell	1
2	W. E. Eves	1	12	W. E. Eves	1	22	John J. Darnell	1
3	W. E. Eves	1	13	W. E. Eves	1	23	W. E. Eves	1
4	W. E. Eves	1	14	W. E. Eves	1	24	W. E. Eves	1
5	W. E. Eves	1	15	W. E. Eves	1	25	W. E. Eves	1
6	W. E. Eves	1	16	W. E. Eves	1	26	W. E. Eves	1
7	W. E. Eves	1	17	W. E. Eves	1	27	W. E. Eves	1
8	W. E. Eves	1	18	W. E. Eves	1	28	W. E. Eves	1
9	W. E. Eves	1	19	W. E. Eves	1	29	W. E. Eves	1
10	W. E. Eves	1	20	W. E. Eves	1	30	W. E. Eves	1

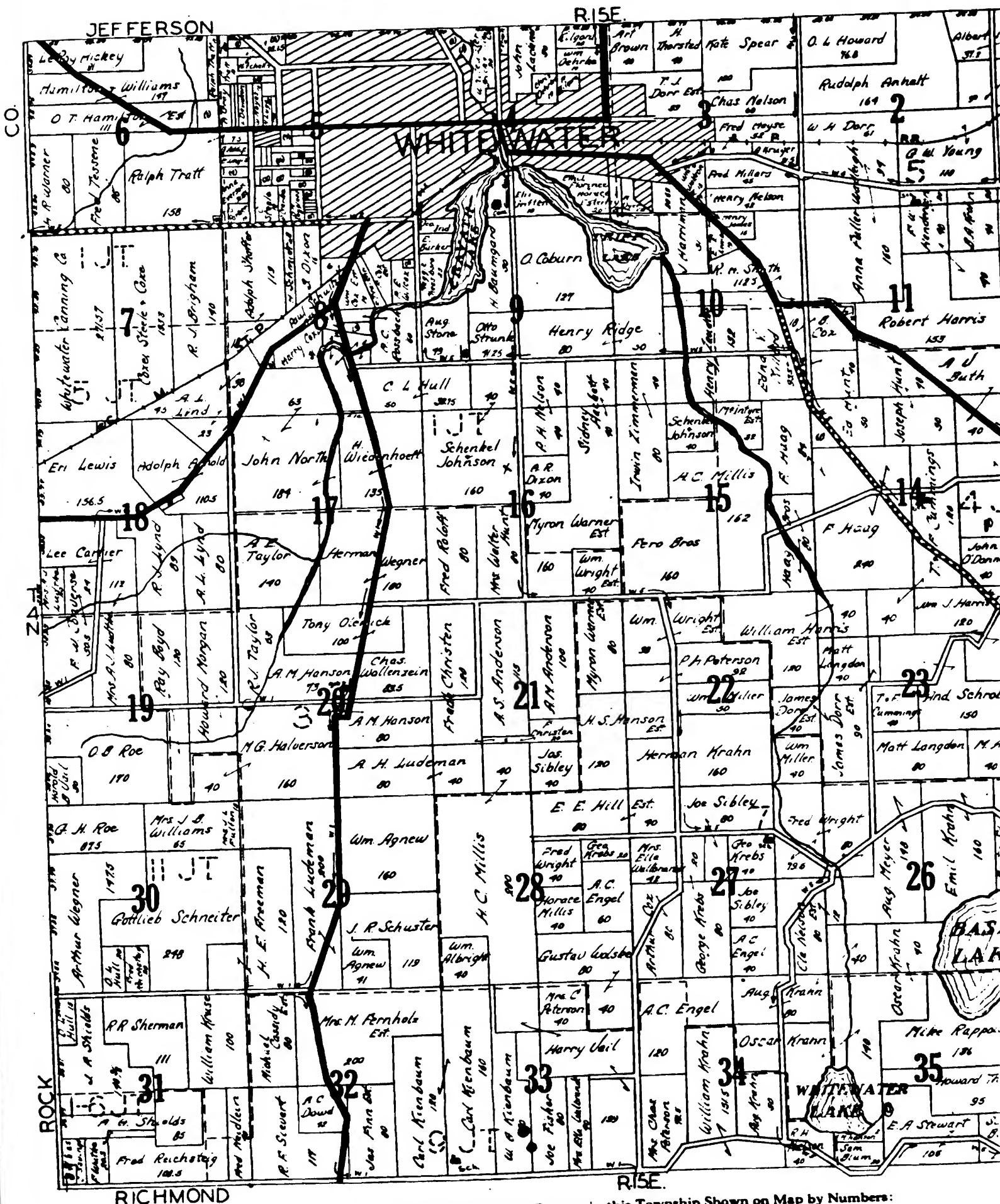
County and State Roads
Other Unimproved Roads
School District



MAP OF Whitewater Township Town 4 North Range 15 East

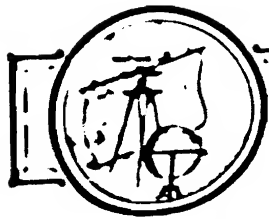


SCALE 2 INCHES 1 MILE



List of Small Property Owners in this Township Shown on Map by Numbers:

No.	Name	Acres	No.	Name	Acres	No.	Name	Acres	No.	Name	Acres
1	W. B. Egan	2	11	Mary Welch	2	21	M. B. Bess	1	31	James O. Dorn	1
2	W. C. Egan	2	12	Wm. A. Ritz	2	22	E. Bess	1	32	Stacy Johnson	1
3	H. Kutz	2	13	J. M. Lee	2	23	H. Kopp	1	33	Wm. M. Lee	1
4	Mrs. Fred Casper	2.1	14	J. C. Younghouse	2	24	H. O. Hamilton	1	34	Whitewater Lumber Co.	1
5	W. J. Kutz	1	15	Adam Gunning	1	25	Alfred M. Gray	1	35	Edw. Brown	1
6	A. S. Anderson	1	16	Geo. Hennis	1	26	W. H. Cox	1	36	Edw. C. Little	1
7	Frank Hollinger	1	17	W. Walser	1	27	C. M. Thorne	1			
8	Joe Marantz	22.1	18	Paul Wenzel	1	28	Paul Wenzel	1			



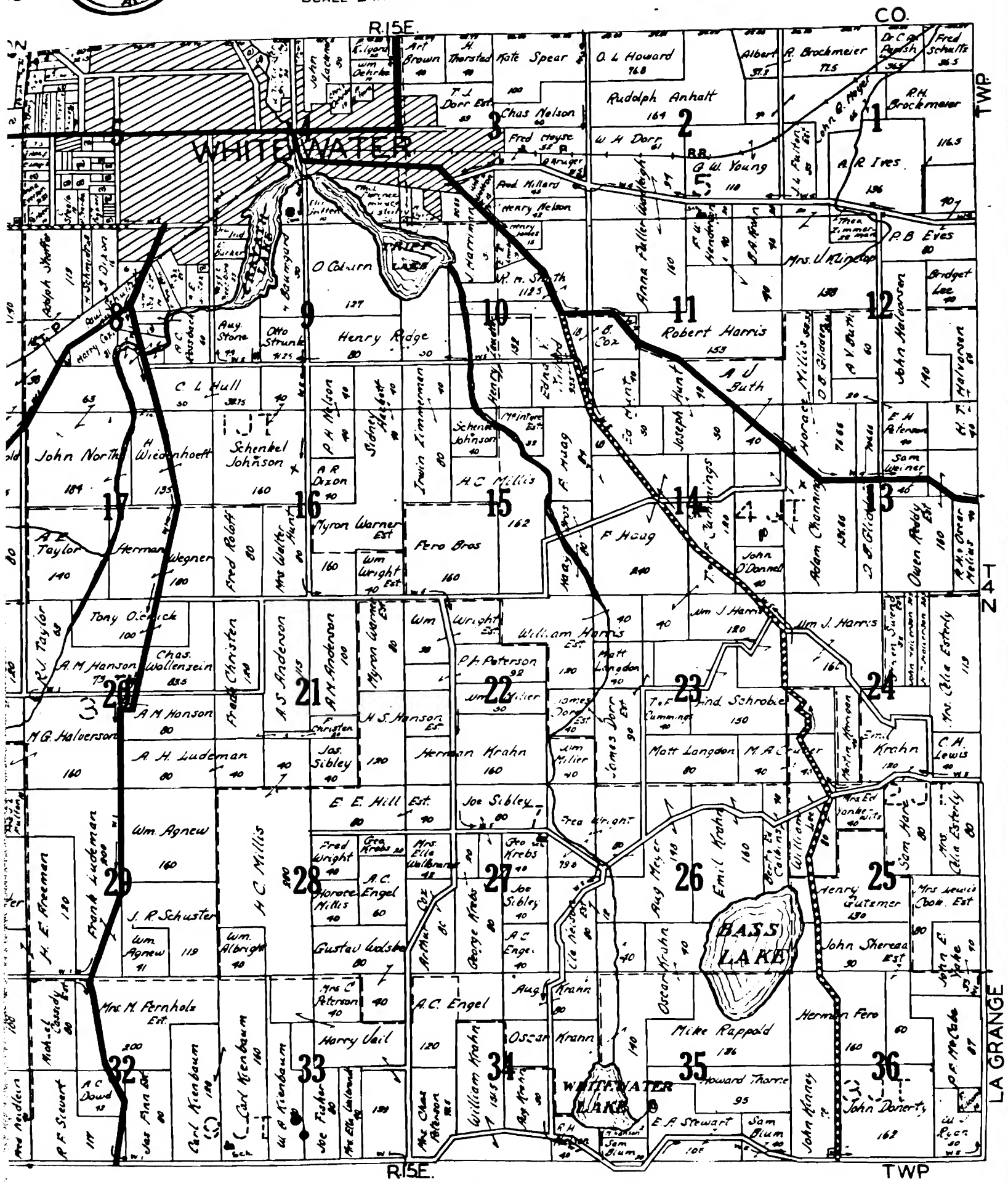
MAP OF
Whitewater Township
Town 4 North Range 15 East



1/2 in.
1/4 in.
1/8 in.
1/16 in.

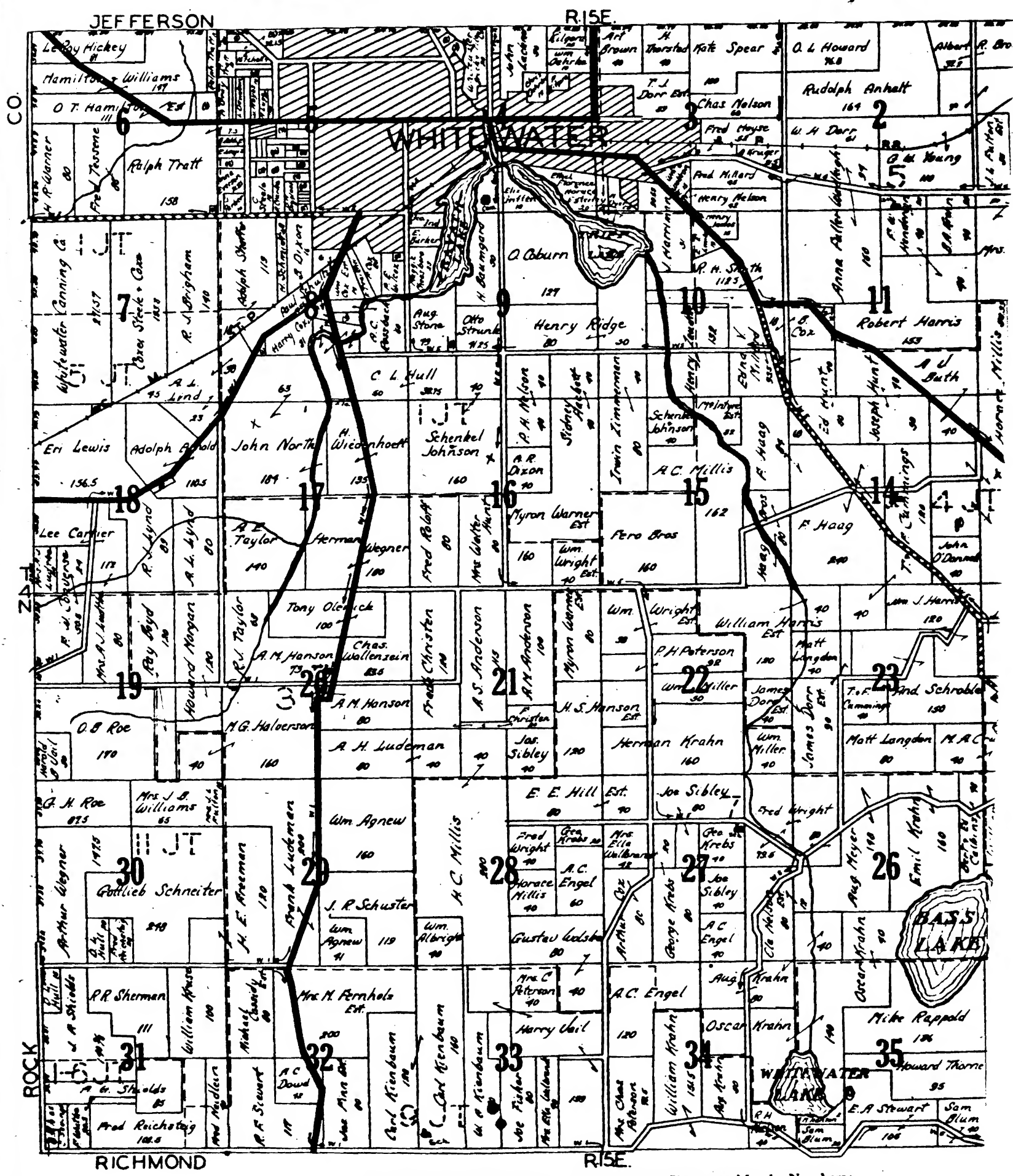
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SCALE 2 INCHES 1 MILE



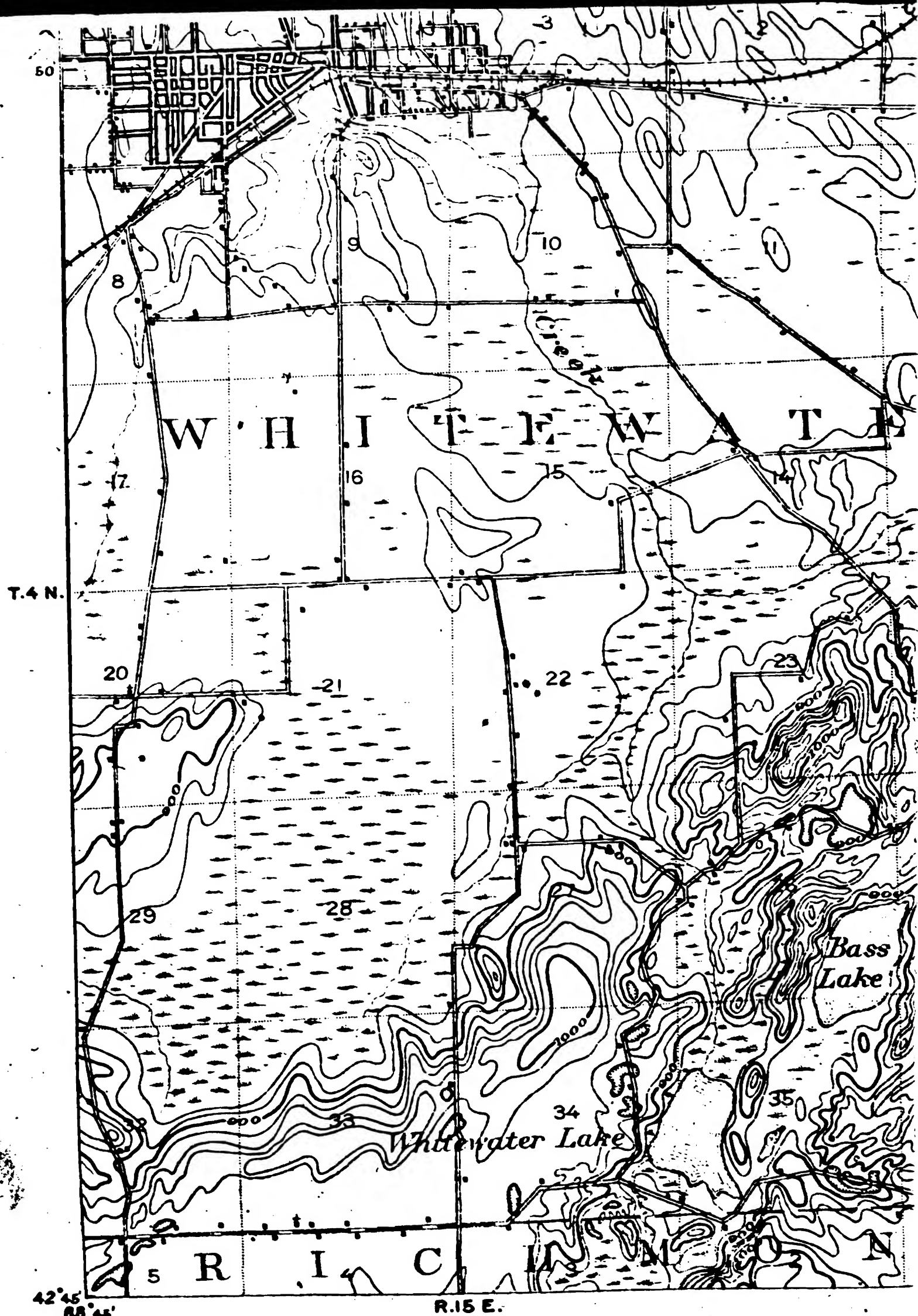
List of Small Property Owners in this Township Shown on Map by Numbers:

No.	Name	Acres	No.	Name	Acres	No.	Name	Acres	No.	Name	Acres
1	John North	184	11	Robert Harris	153	21	A. S. Anderson	100	31	William Krann	120
2	Henry Ridge	127	12	John Malvern	140	22	Wm. Wright	40	32	Carl Kienbaum	100
3	John North	184	13	John Malvern	140	23	Wm. Wright	40	33	Carl Kienbaum	100
4	Henry Ridge	127	14	John Malvern	140	24	Wm. Wright	40	34	Carl Kienbaum	100
5	John North	184	15	John Malvern	140	25	Wm. Wright	40	35	Carl Kienbaum	100
6	Henry Ridge	127	16	John Malvern	140	26	Wm. Wright	40	36	Carl Kienbaum	100
7	John North	184	17	John Malvern	140	27	Wm. Wright	40			
8	Henry Ridge	127	18	John Malvern	140	28	Wm. Wright	40			
9	John North	184	19	John Malvern	140	29	Wm. Wright	40			
10	Henry Ridge	127	20	John Malvern	140	30	Wm. Wright	40			



List of Small Property Owners in this Township Shown on Map by Numbers:

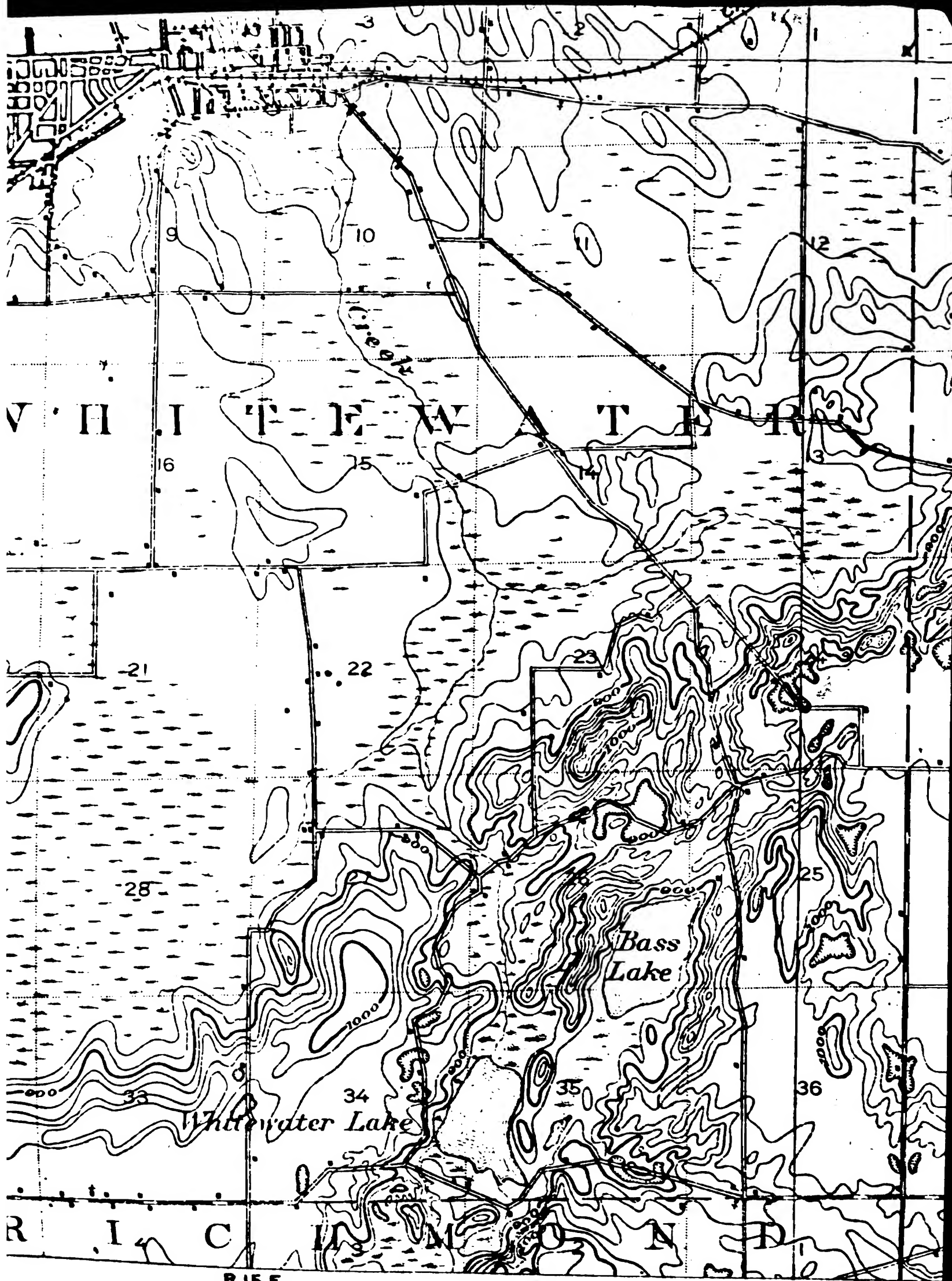
No.	Name	Acres	No.	Name	Acres	No.	Name	Acres	No.	Name	Acres
1	H. E. Freeman	164	16	M. M. Mays	1	11	James O'Donnell	10			
2	K. C. Upton	1	17	F. Blum	1	12	Steen Johnson	10			
3	H. Kutz	1	18	H. Kropp	1	13	Mathew McLean	1			
4	Mrs. Fred Cooper	5.11	19	J. C. Younghouse	1	14	Whitewater Canning Co.	2			
5	W. J. Kyle	4	20	Adam Channing	1	15	Whitewater Canning Co.	2			
6	S. S. Anderson	1.4	21	Geo. Dennis	1	16	W. H. Cox	1			
7	Frank Hollinger	7	22	W. Warner	9	17	C. M. Thorne	1			
8	Jim Mussett	22.11	23	Laura Will	4	18	Paul Wendt	1			



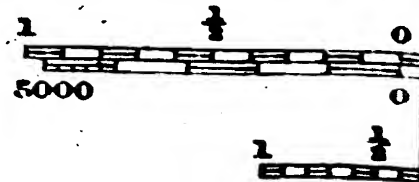
(Shapiro)

Henry Gannett, Chief Topographer.
 Jno. H. Renshaw, Geographer in charge.
 Triangulation by the U. S. Coast and Geodetic and Lake Surveys.
 Topography by Van. H. Manning Jr.
 Surveyed in 1889
 Revised in 1903 by H. L. McDonald.

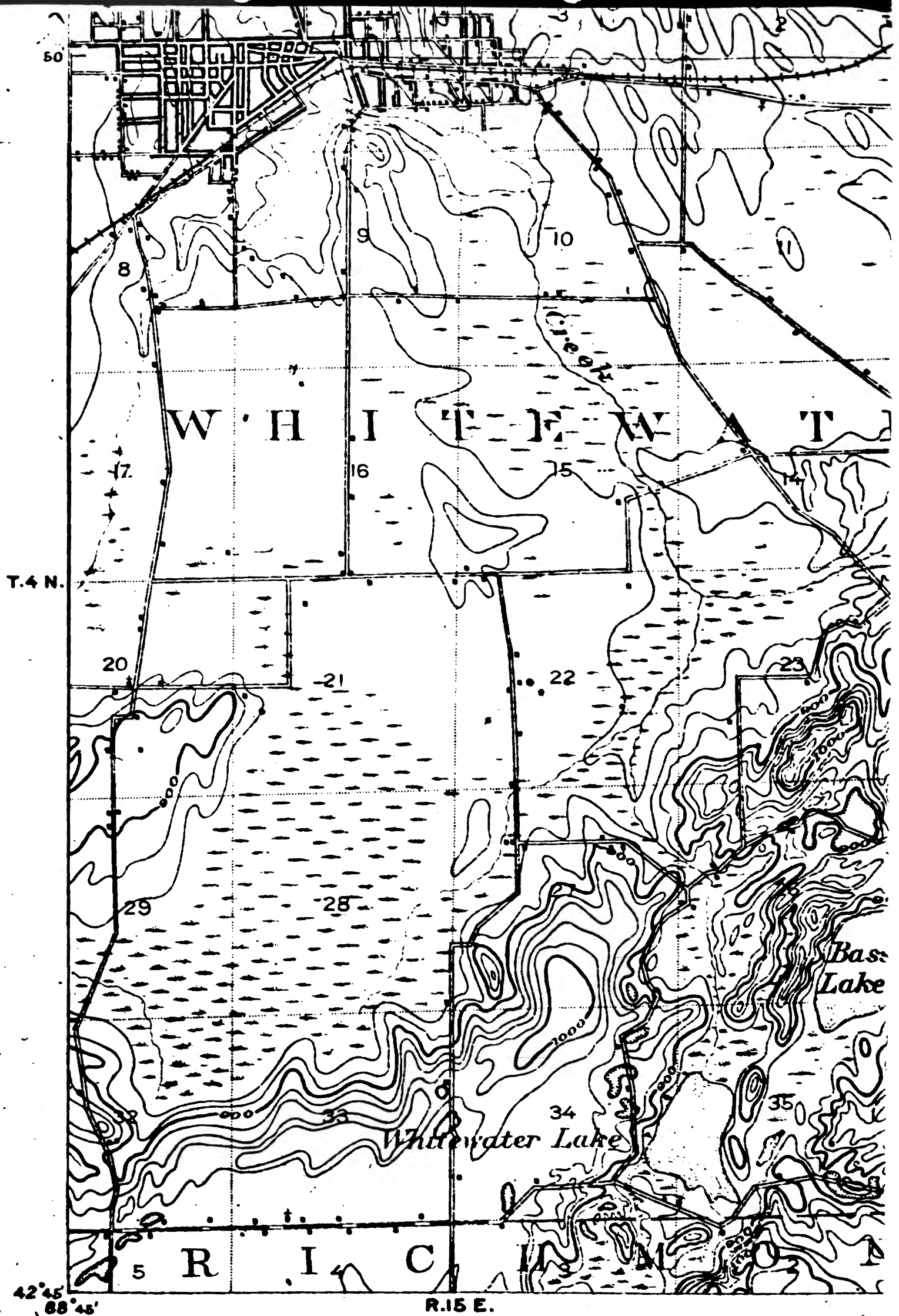
3



on Chief Topographer.
 new. Geographer in charge.
 on by the U.S. Coast and Geodetic and Lake Surveys.
 by Van H. Manning Jr.
 ed in 1889
 1903 by H.L. McDonald.

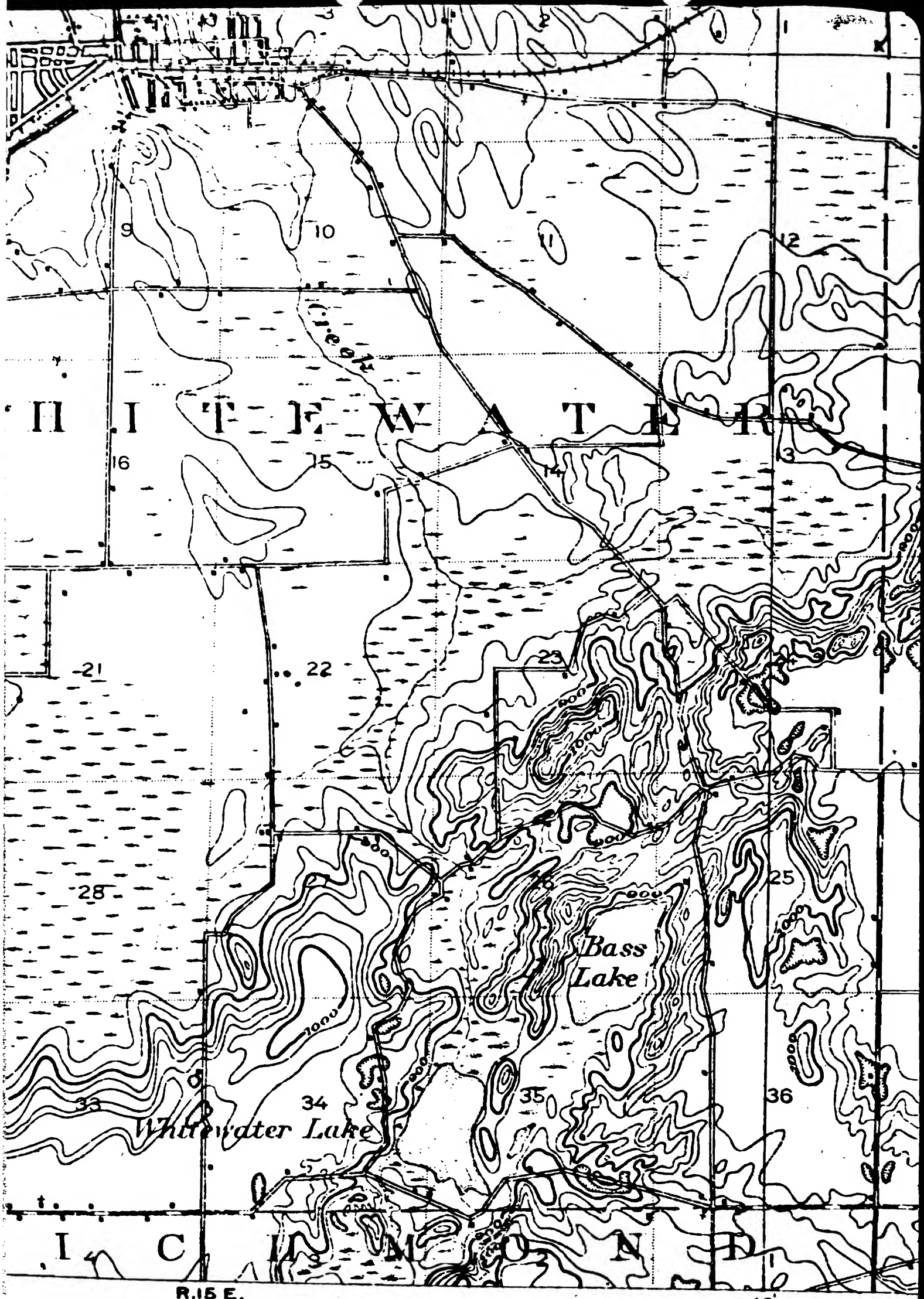


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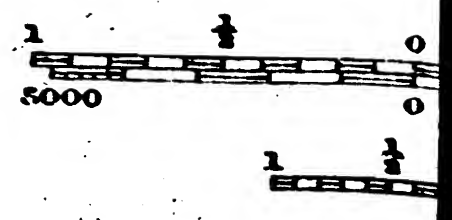


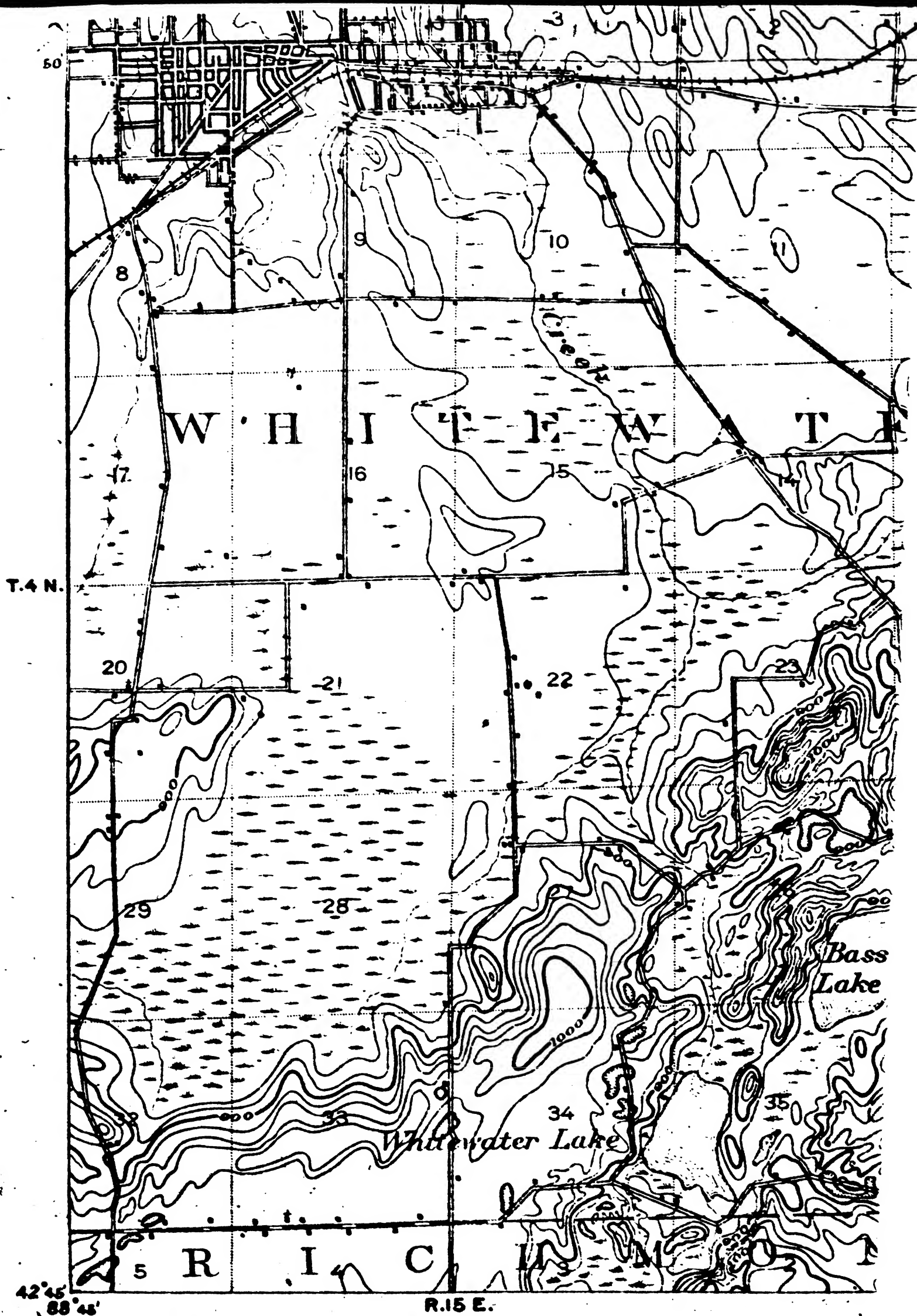
Shapiro

Henry Gannett, Chief Topographer.
 Jno. H. Renshaw, Geographer in charge.
 Triangulation by the U. S. Coast and Geodetic and Lake Surveys.
 Topography by Van. H. Manning Jr.
 Surveyed in 1889
 Revised in 1903 by H. L. McDonald.



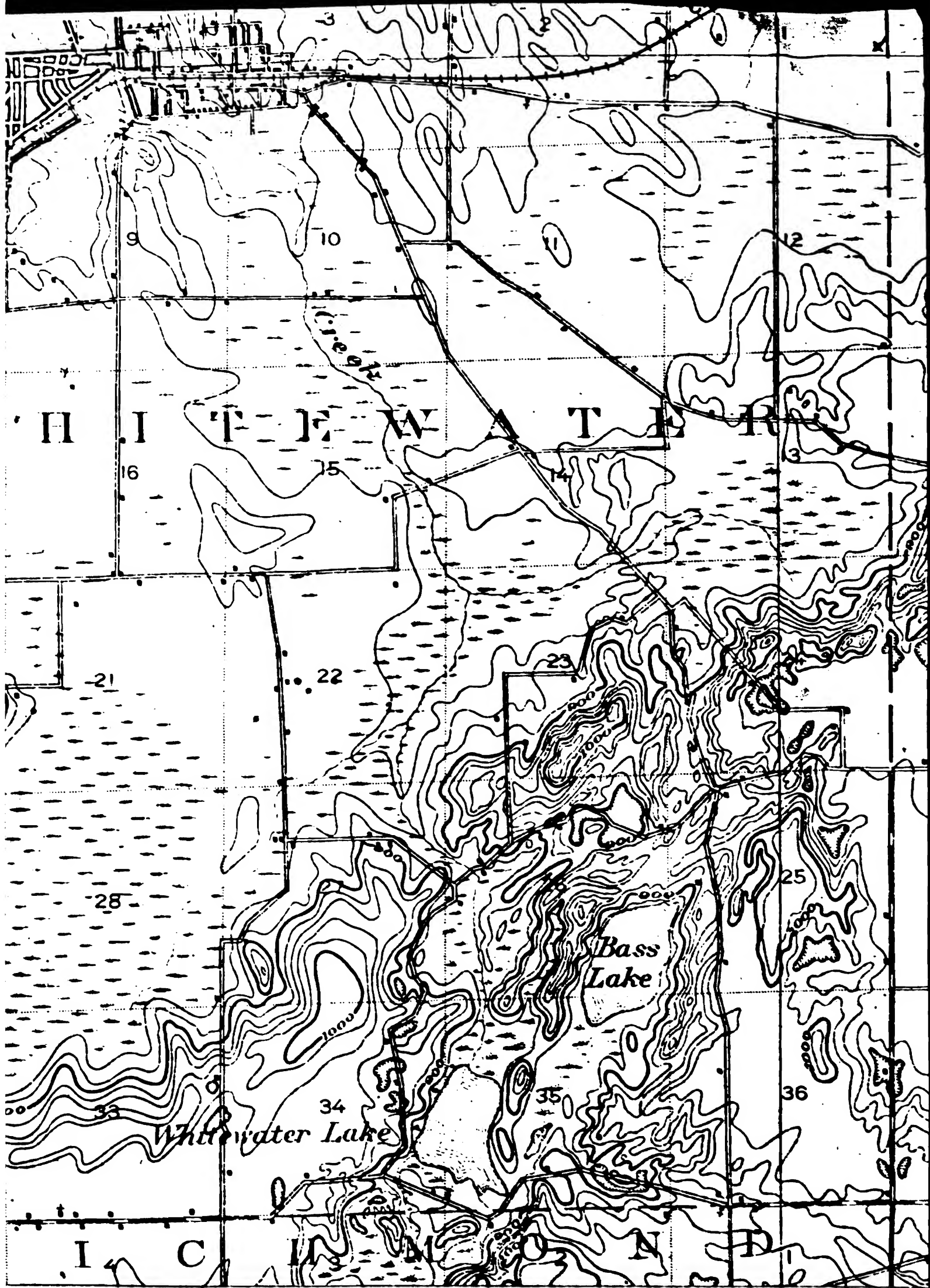
Chief Topographer.
Geographer in charge.
the U.S. Coast and Geodetic and Lake Surveys.
J. H. Manning Jr.
in 1889
by H. L. McDonald.





Shapiro 42° 45' 88° 45'

Henry Gannett, Chief Topographer.
 Jno. H. Renshaw, Geographer in charge.
 Triangulation by the U. S. Coast and Geodetic and Lake Surveys.
 Topography by Van. H. Manning Jr.
 Surveyed in 1889
 Revised in 1903 by H. L. McDonald.



R.15 E.

Chief Topographer.
 e. Geographer in charge.
 by the U.S. Coast and Geodetic and Lake Surveys.
 Van. H. Manning Jr.
 1 in 1889
 3 by H.L. McDonald.

1 1/2 0
 8000

1 1/2

W F A

Town of Palmyra
R-16-E

Town of Eagle
R-17-E

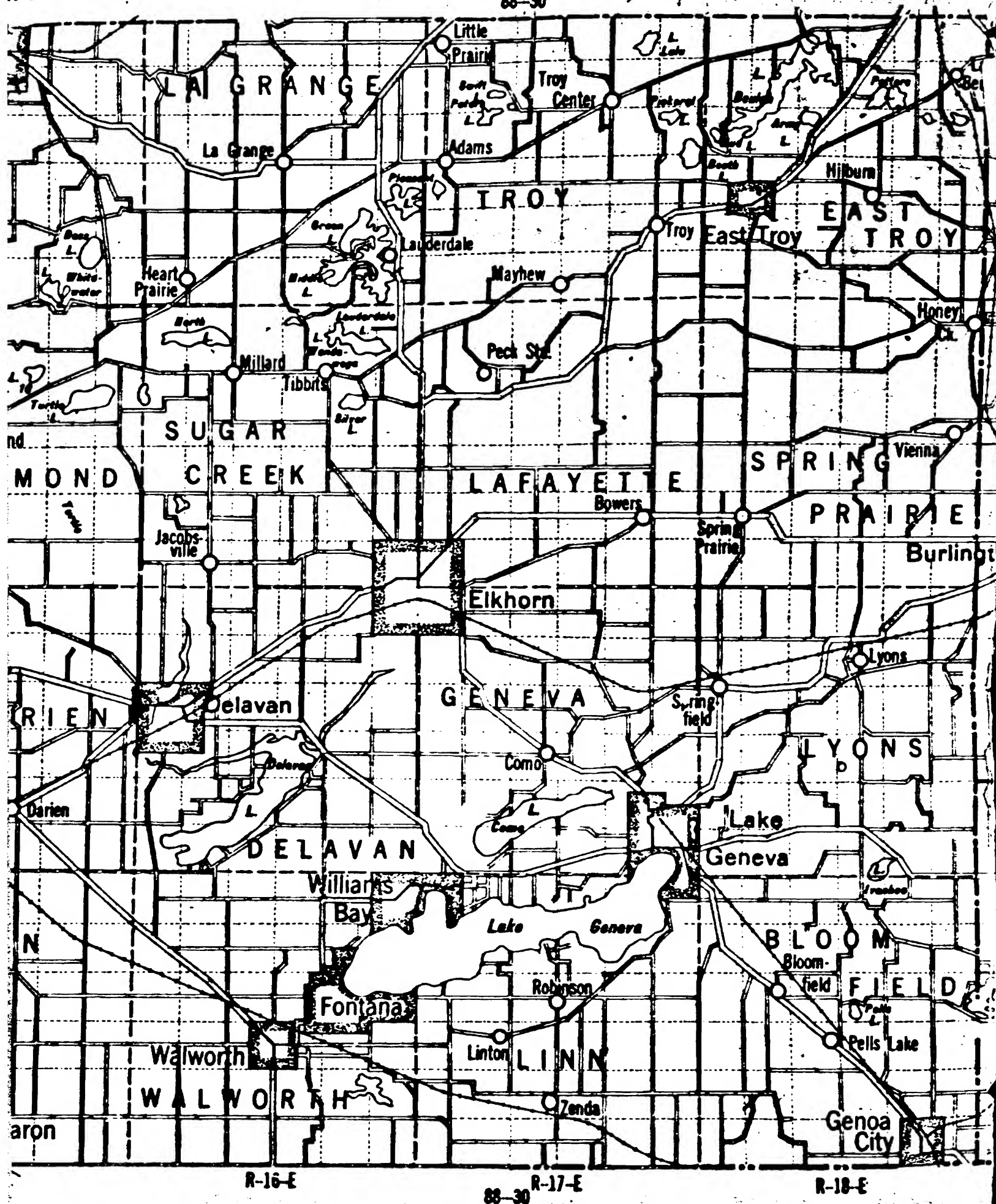
88-30



FFERSON
Cold Spring
Town of Palmyra
R-16-E

W A U K
Town of Eagle
R-17-E
88-30

Town of Mukwonago
R-18-E

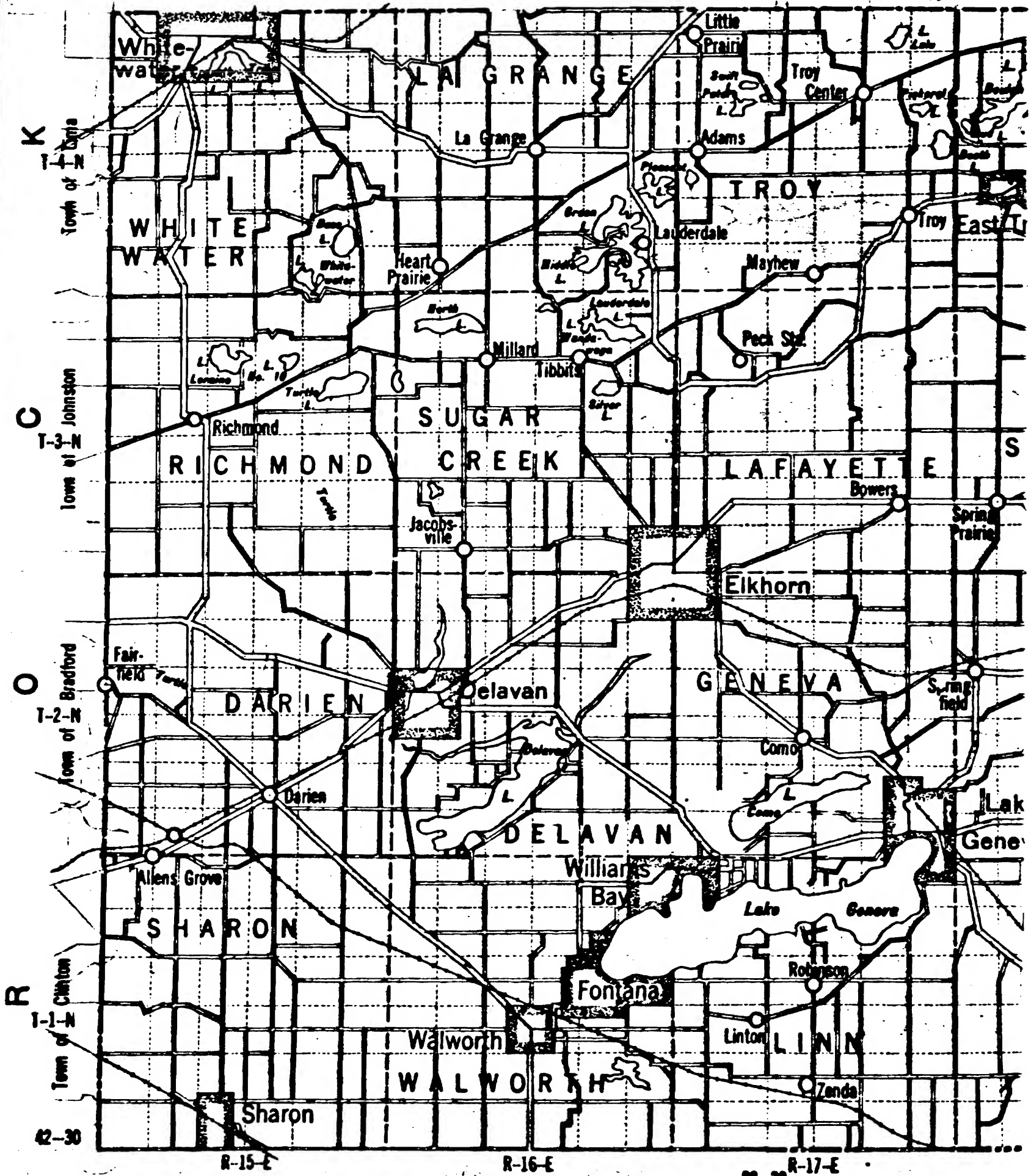


JEFFERSON

Town of Cold Spring
R-15-E

Town of Palmyra
R-16-E

Town of Eagle
R-17-E
88-30



F E R S O N
Town of Palmyra
R-16-E

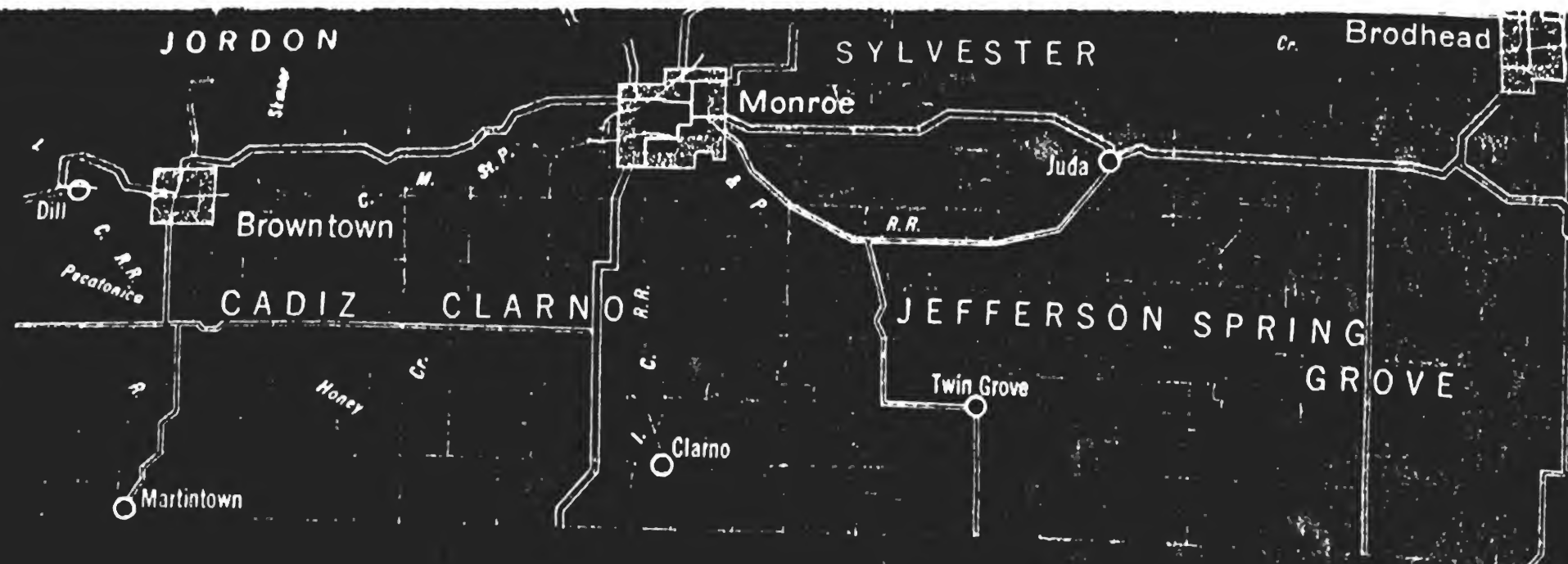
W A U K
Town of Eagle
R-17-E
88-30

Town of Mukwonago
R-18-E



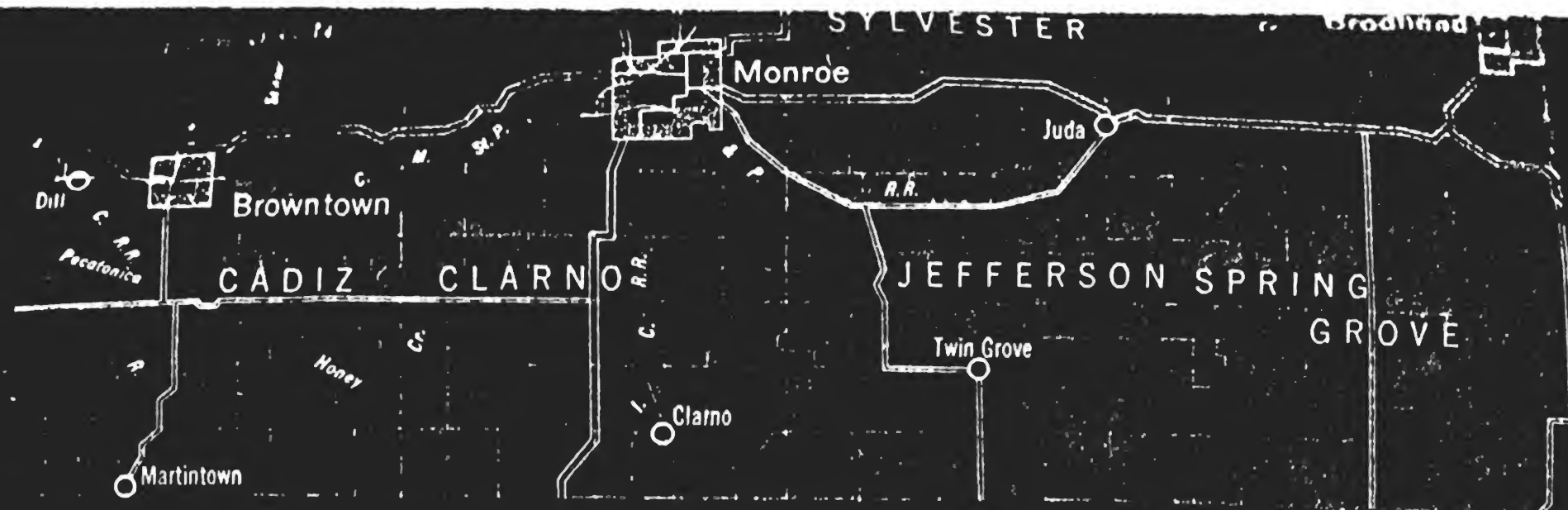




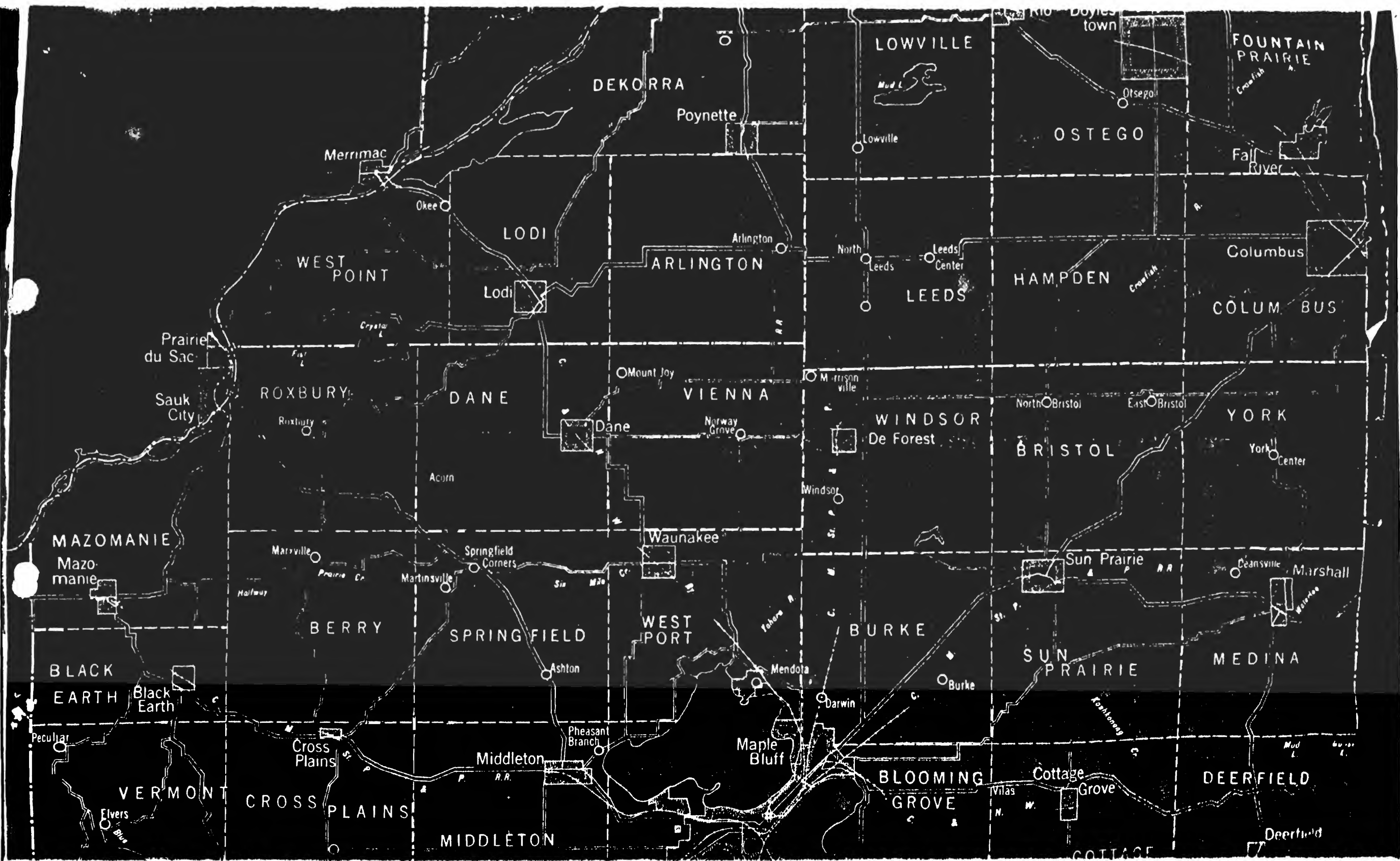


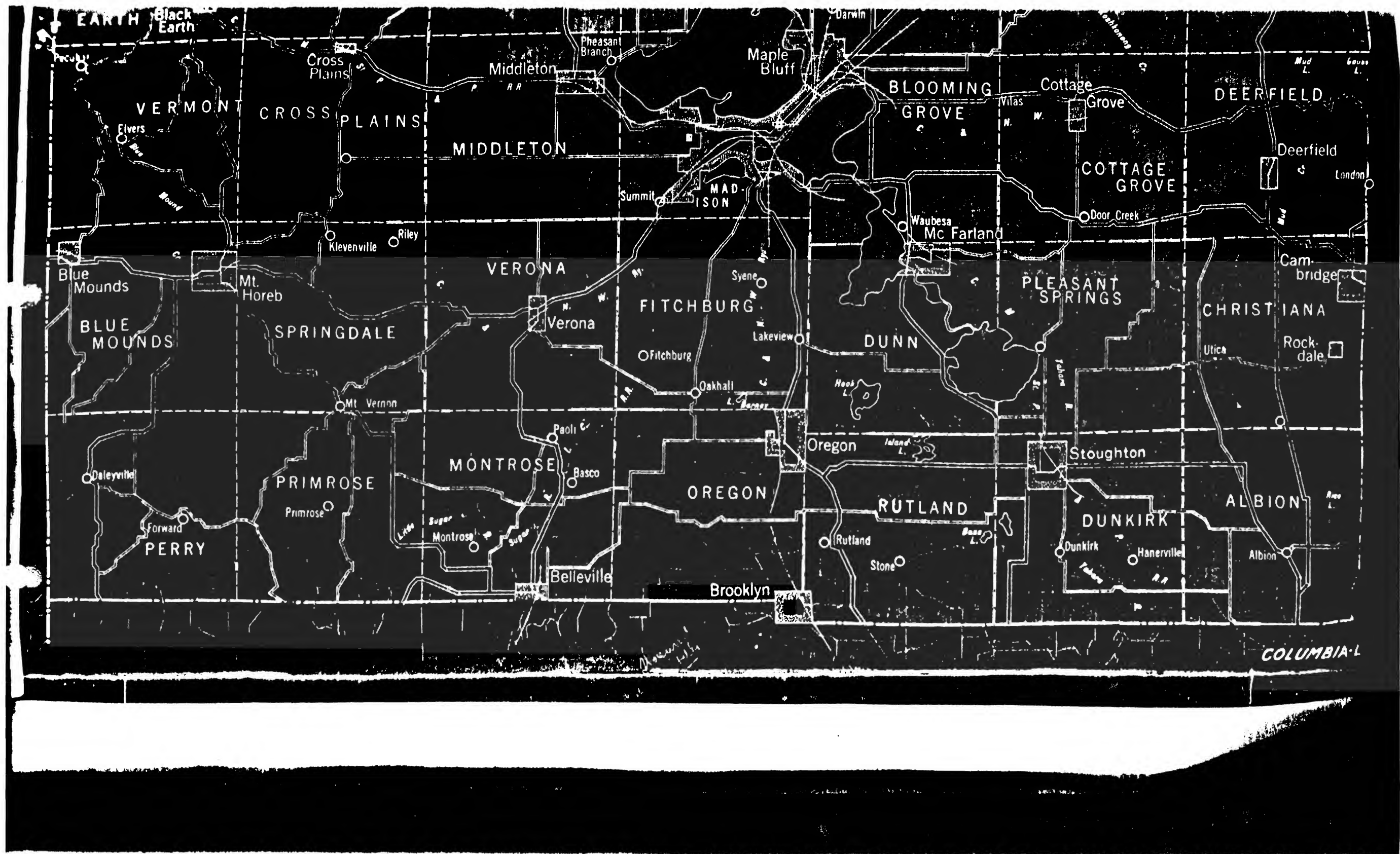


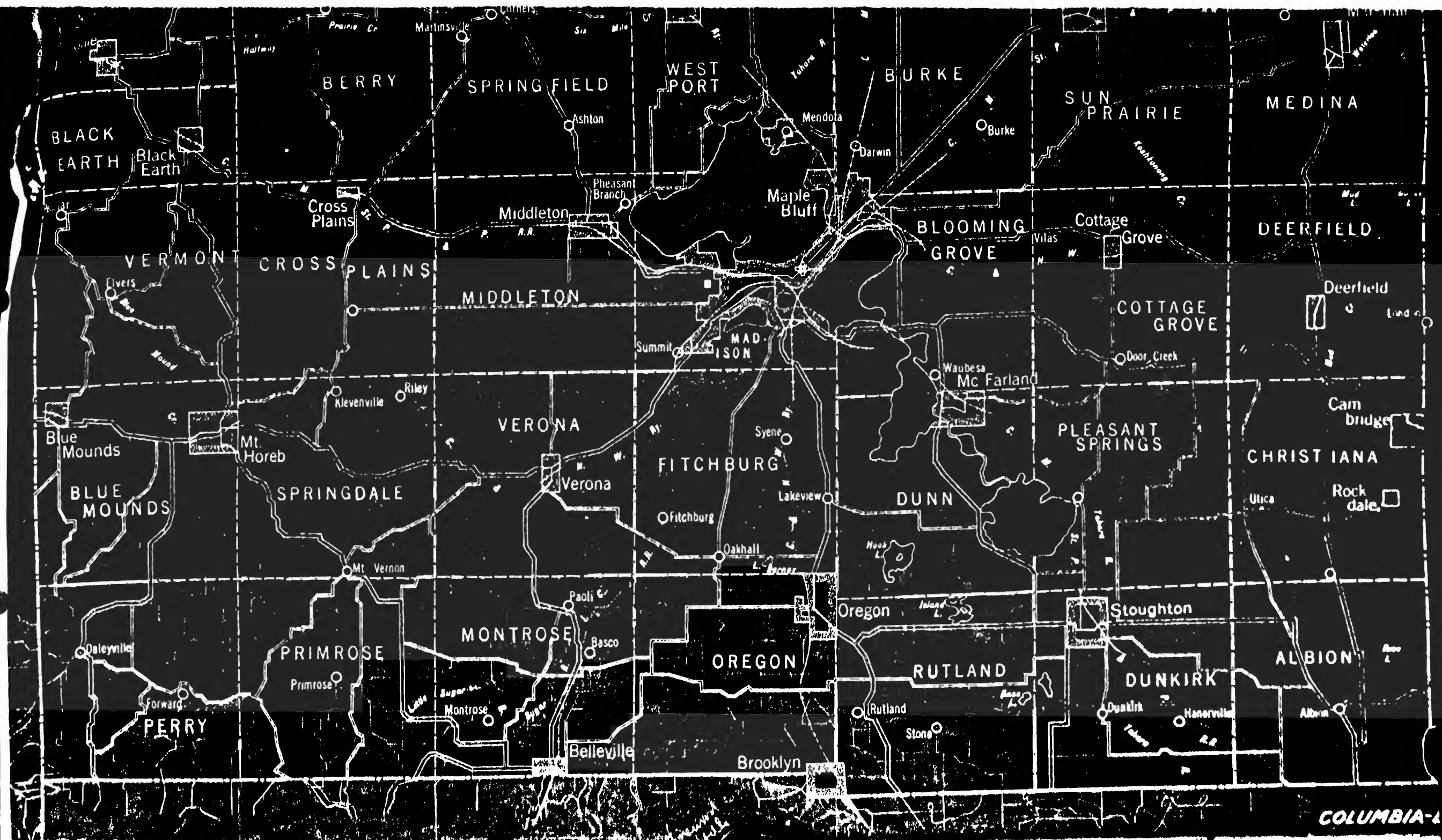


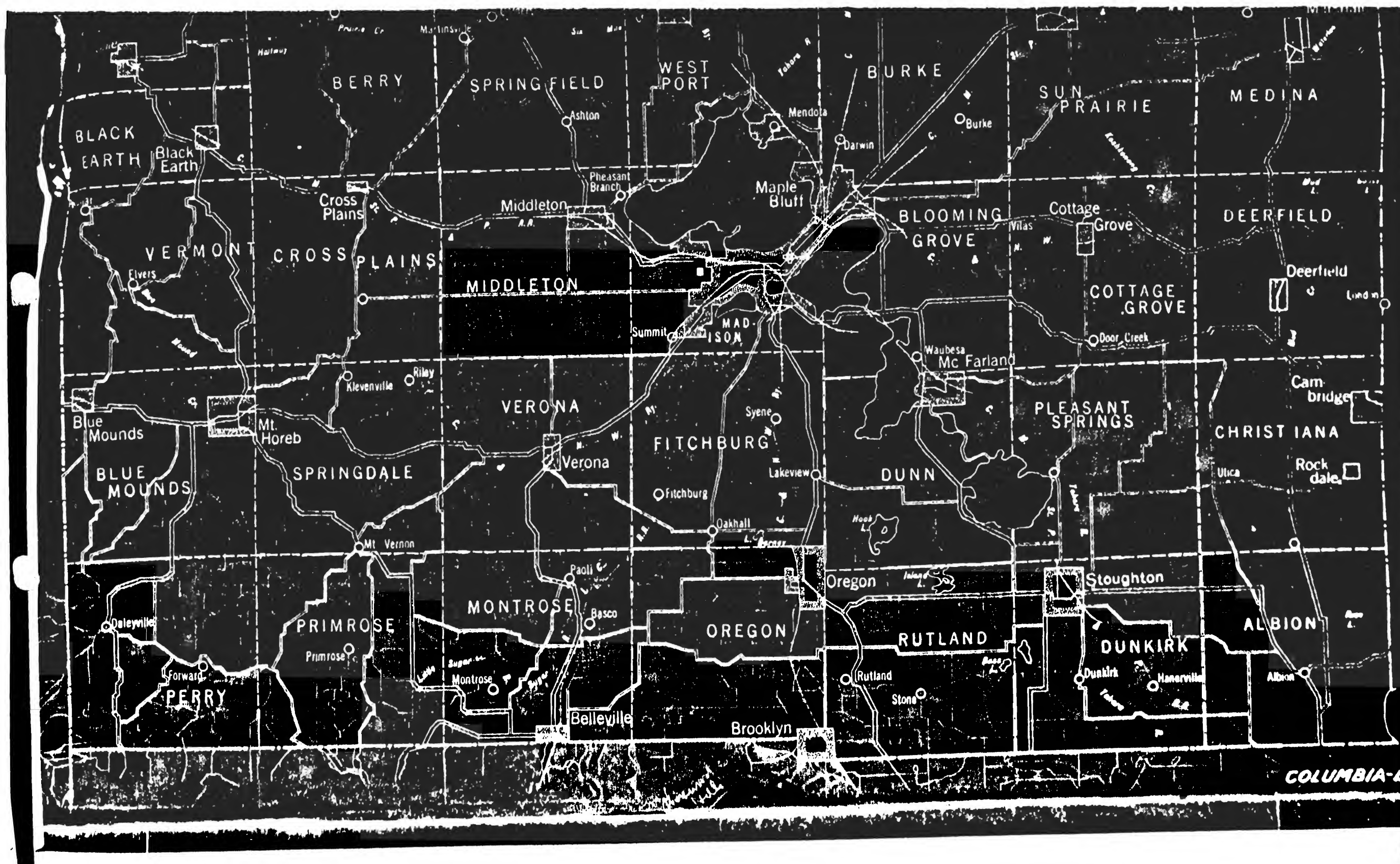


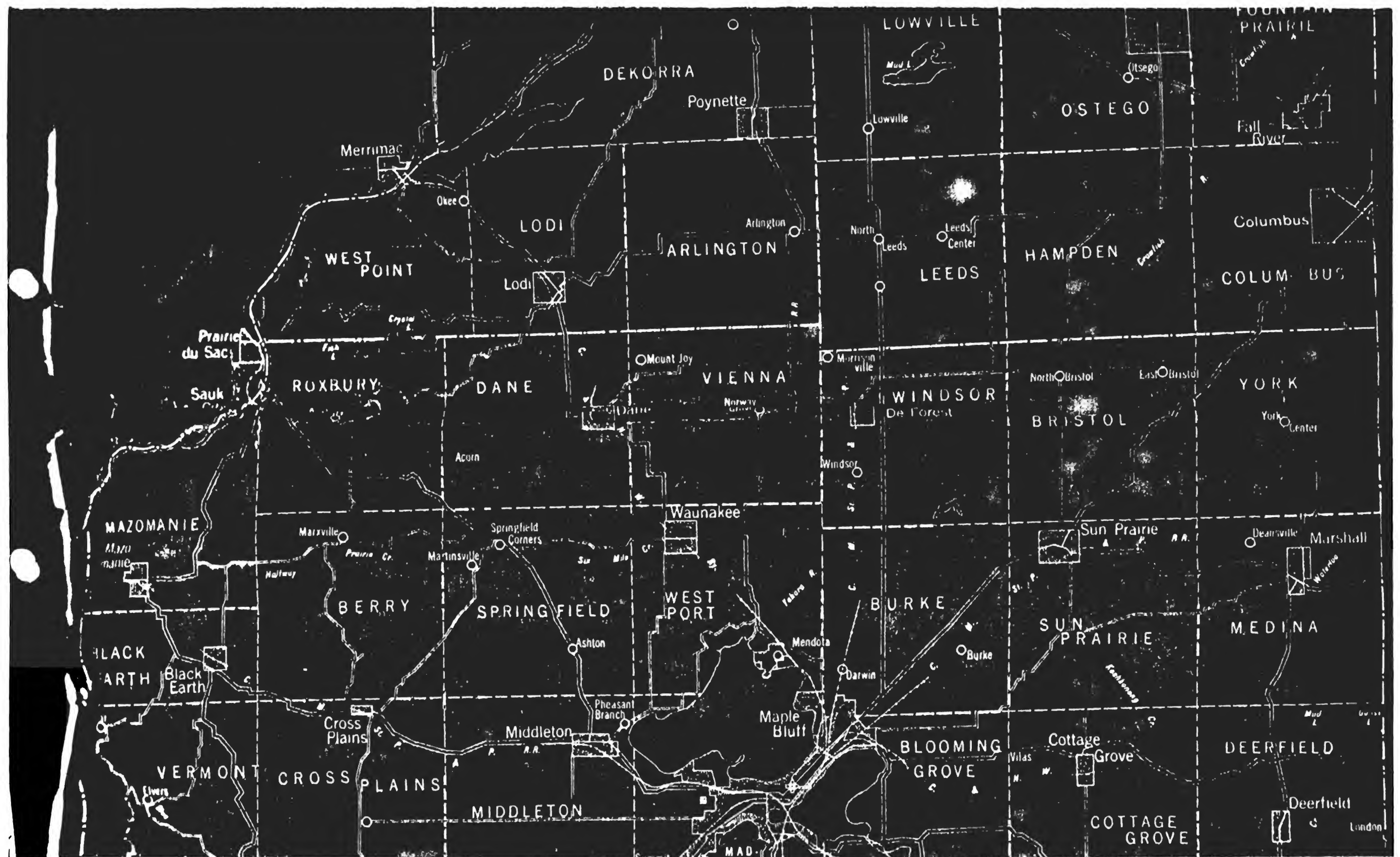




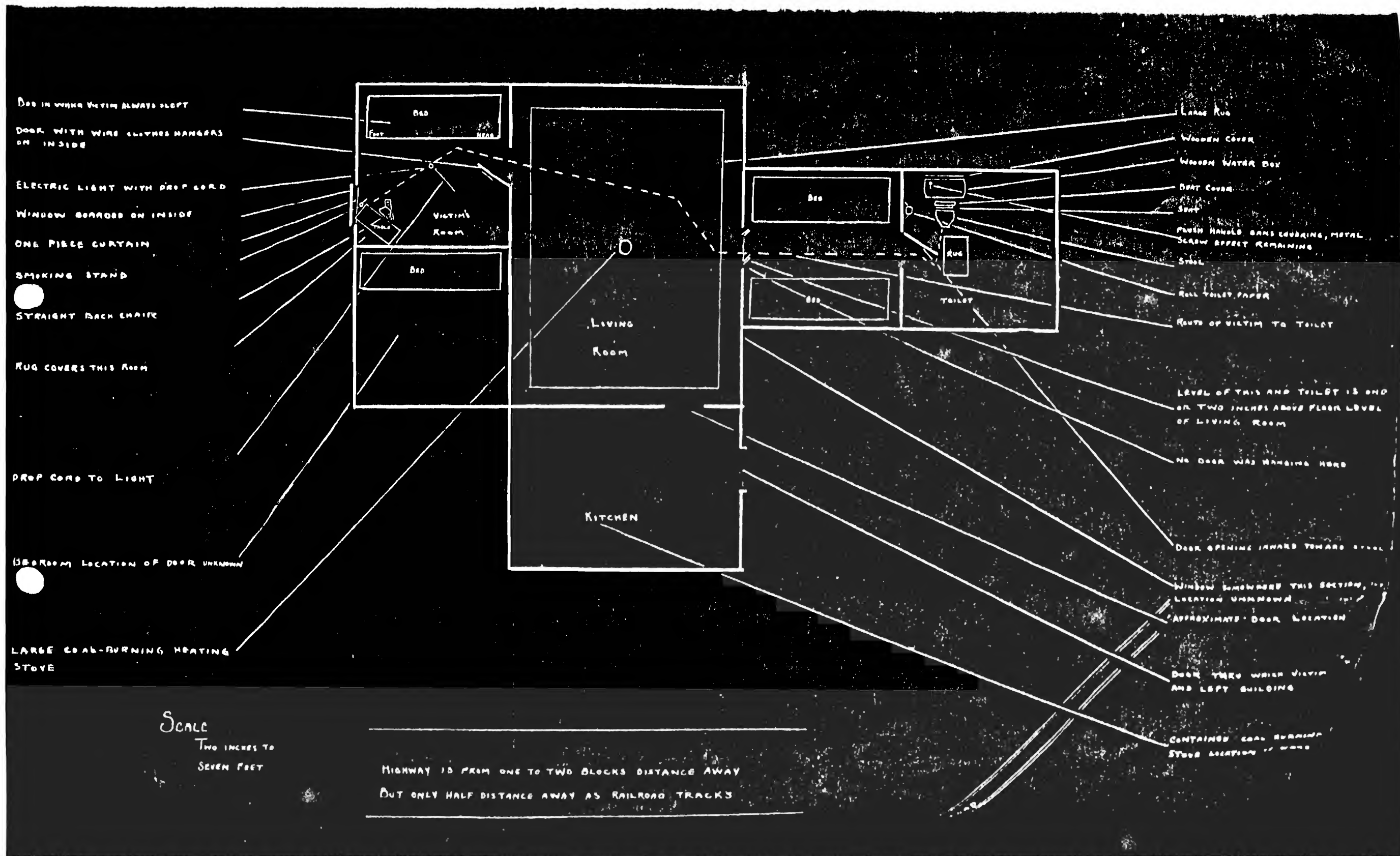












BED IN WHICH VICTIM ALWAYS SLEPT

DOOR WITH WIRE CLOTHES HANGERS ON INSIDE

ELECTRIC LIGHT WITH DROP CORD

WINDOW BOARDED ON INSIDE

ONE PIECE CURTAIN

SMOKING STAND

STRAIGHT BACK CHAIR

RUG COVERS THIS ROOM

DROP CORD TO LIGHT

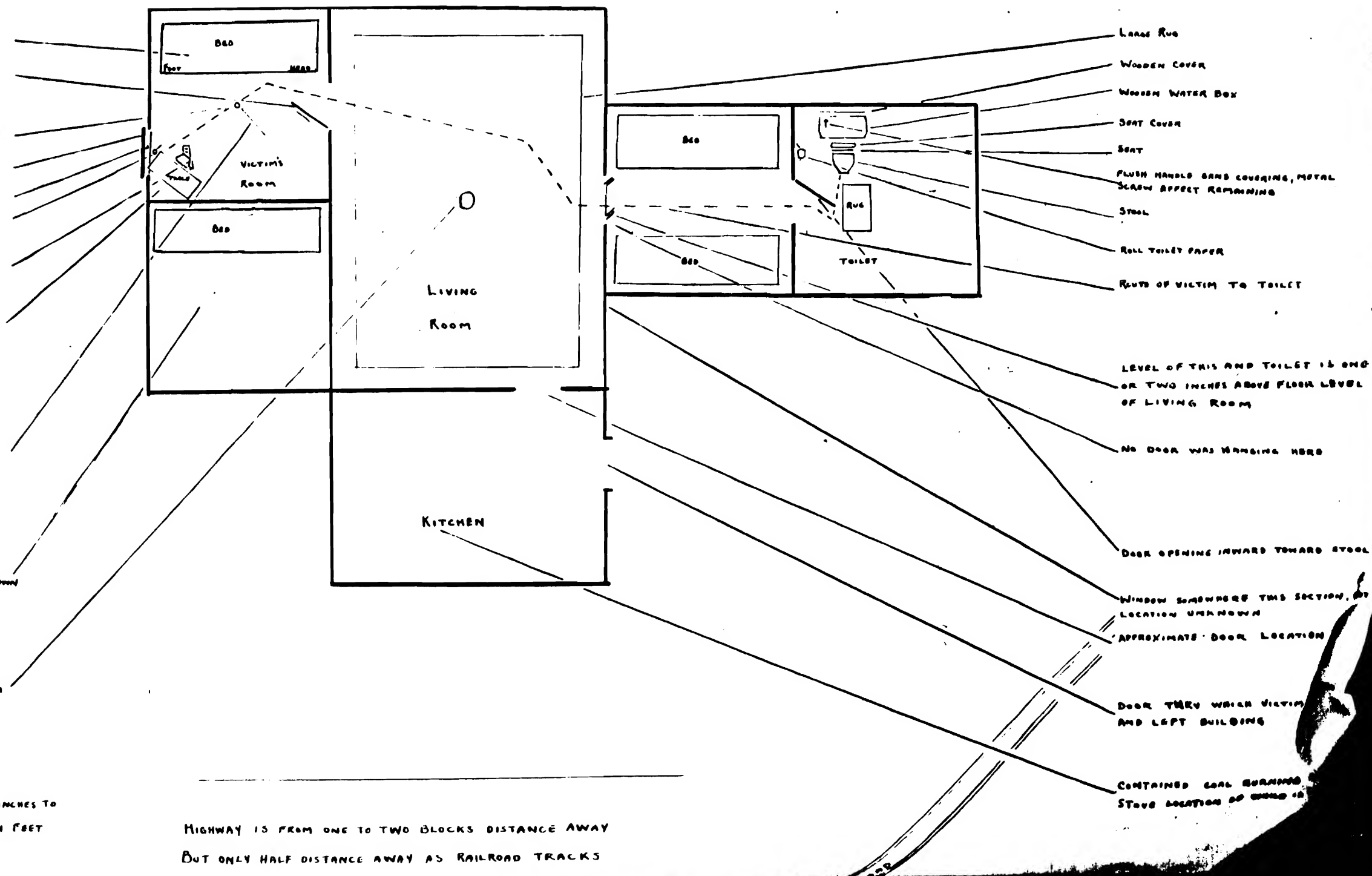
BEDROOM LOCATION OF DOOR UNKNOWN

LARGE COAL-BURNING HEATING STOVE

SCALE

TWO INCHES TO
SEVEN FEET

HIGHWAY IS FROM ONE TO TWO BLOCKS DISTANCE AWAY
BUT ONLY HALF DISTANCE AWAY AS RAILROAD TRACKS



BED IN WHICH VICTIM ALWAYS SLEPT

DOOR WITH WIRE CLOTHES HANGERS
ON INSIDE

ELECTRIC LIGHT WITH DROP CORD

WINDOW BOARDED ON INSIDE

ONE PIECE CURTAIN

SMOKING STAND

STRAIGHT BACK CHAIR

RUG COVERS THIS AREA

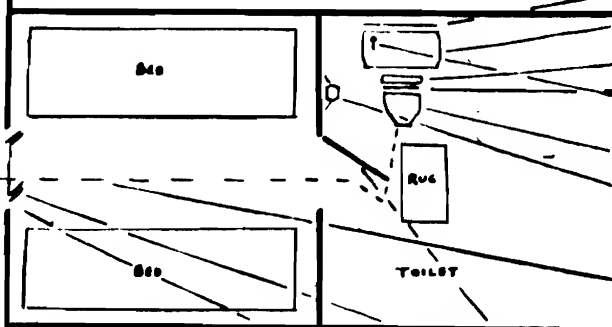
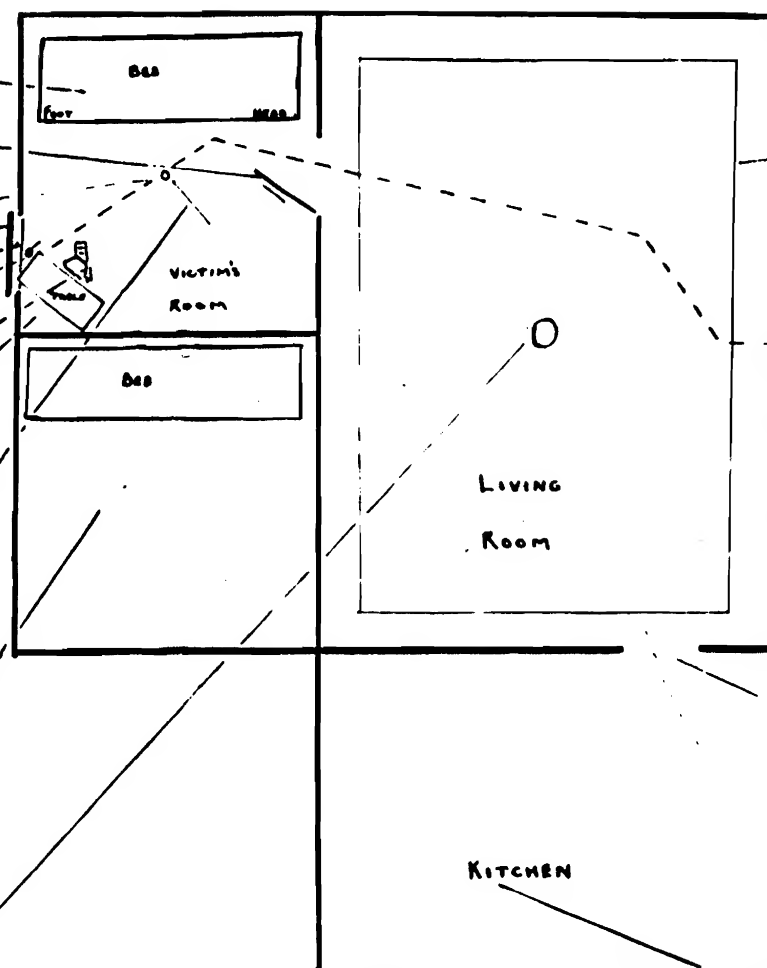
DROP CORD TO LIGHT

BED ROOM LOCATION OF DOOR UNKNOWN

LARGE COAL-BURNING HEATING
STOVE

SCALE
Two INCHES TO
SEVEN FEET

HIGHWAY IS FROM ONE TO TWO BLOCKS DISTANCE AWAY
BUT ONLY HALF DISTANCE AWAY AS RAILROAD TRACKS



Large Rug

Wooden Cover

Wooden Water Box

Seat Cover

Seat

FLUSH HANDLE CURVED COUPLING, METAL
SCREW EFFECT REMAINING

Stool

Roll Toilet Paper

ROUTE OF VICTIM TO TOILET

LEVEL OF THIS AND TOILET IS ONE
OR TWO INCHES ABOVE FLOOR LEVEL
OF LIVING ROOM

NO DOOR WAS HANGING HERE

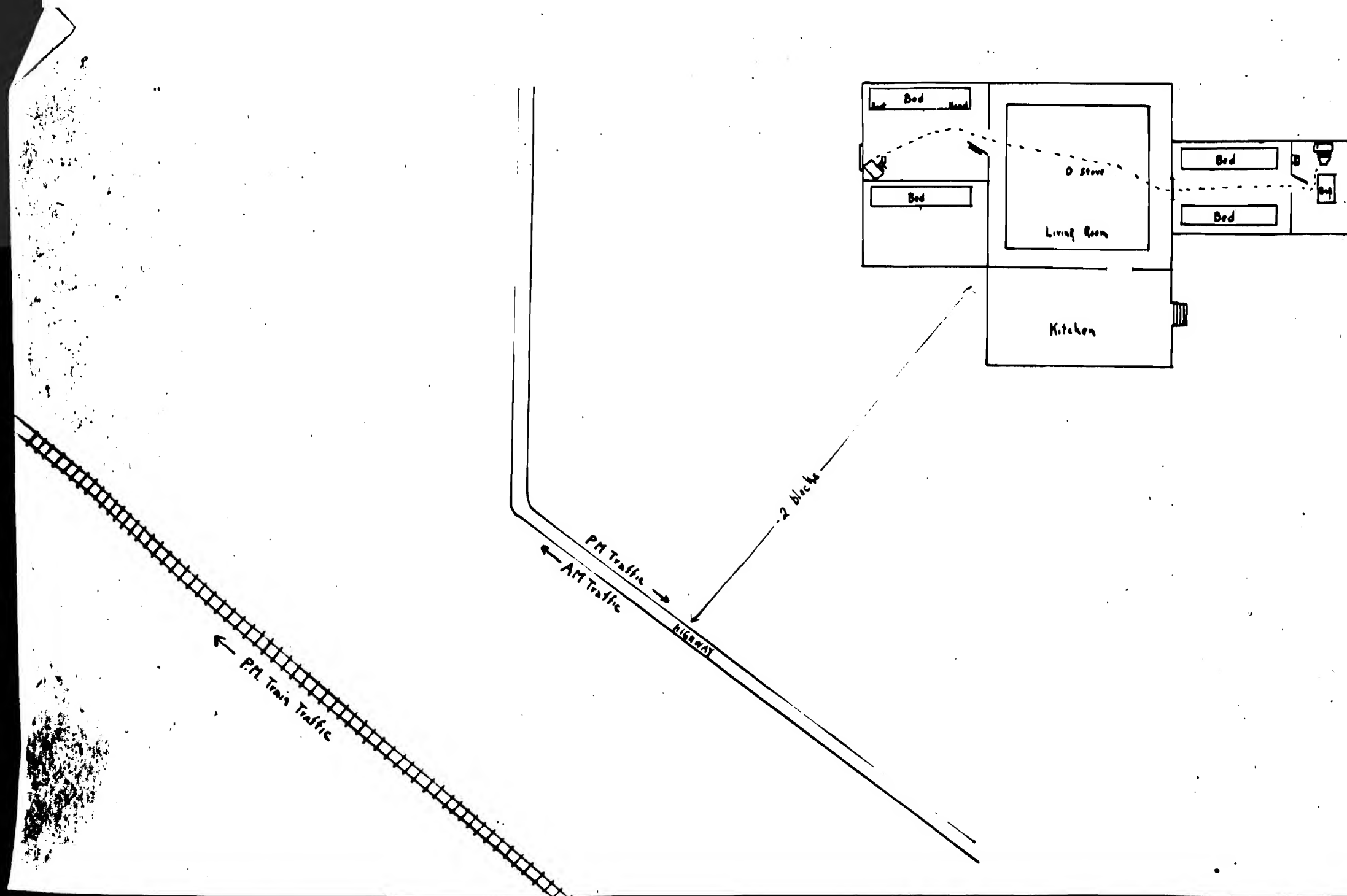
DOOR OPENING INWARD TOWARD STOOL

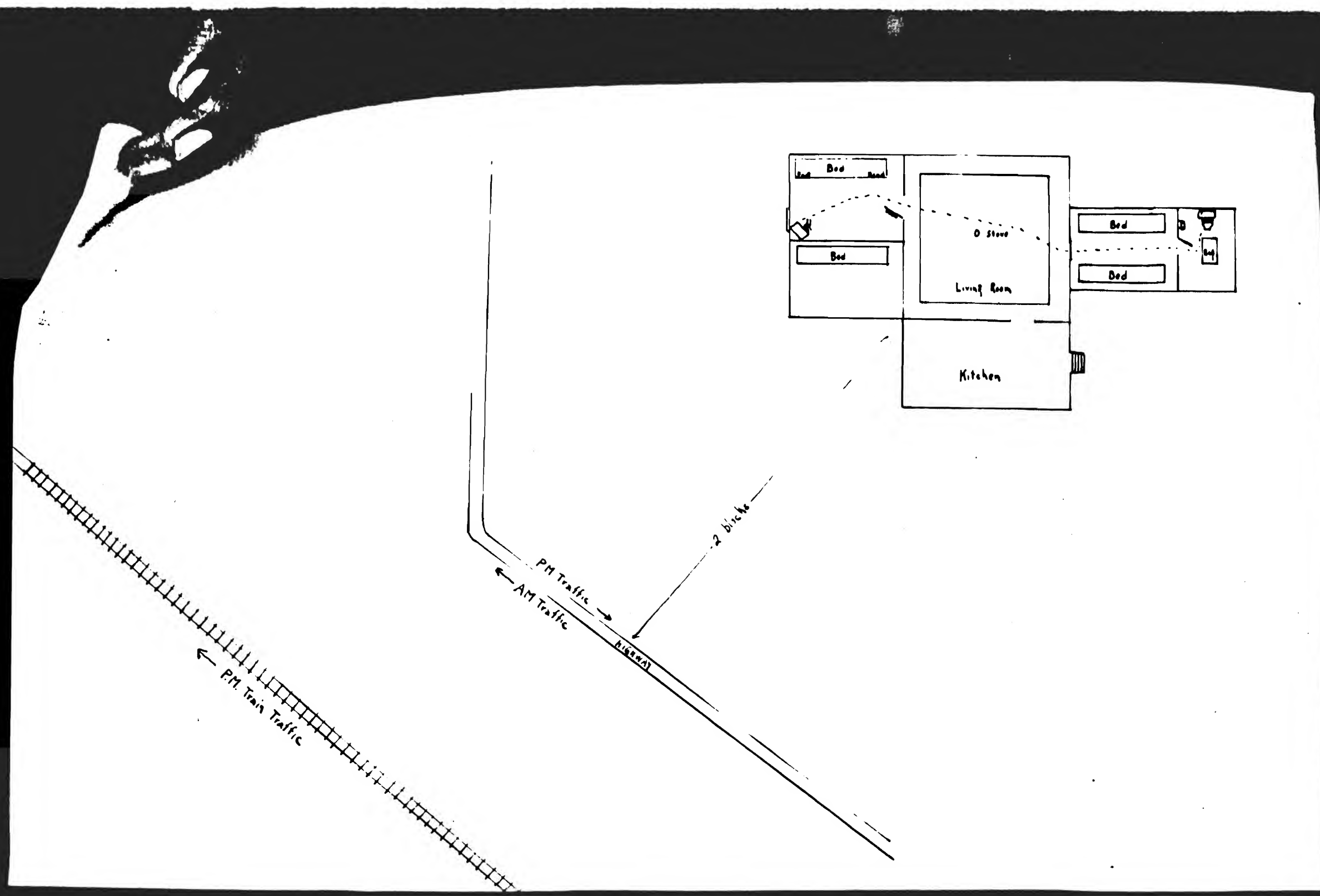
WINDOW SOMEWHERE THIS SECTION
LOCATION UNKNOWN

APPROXIMATE DOOR LOCATION

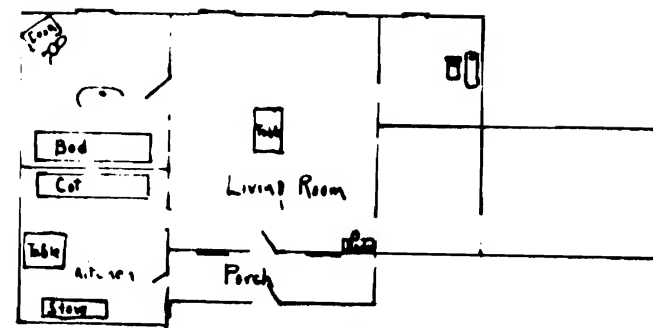
DOOR THRU WHICH VICTIM
AND LEFT BUILDING

CONTAINED COAL-BURNING
STOVE LOCATION OF STOVE





Lake Cravata



There is no walk from Porch to Driveway

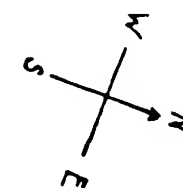
Will Shaw's house
White Water, Wisconsin

Garage

level ground
about 11' above
street level

Driveway
dashed slope down to street

Two houses between
Will Shaw and RR tracks



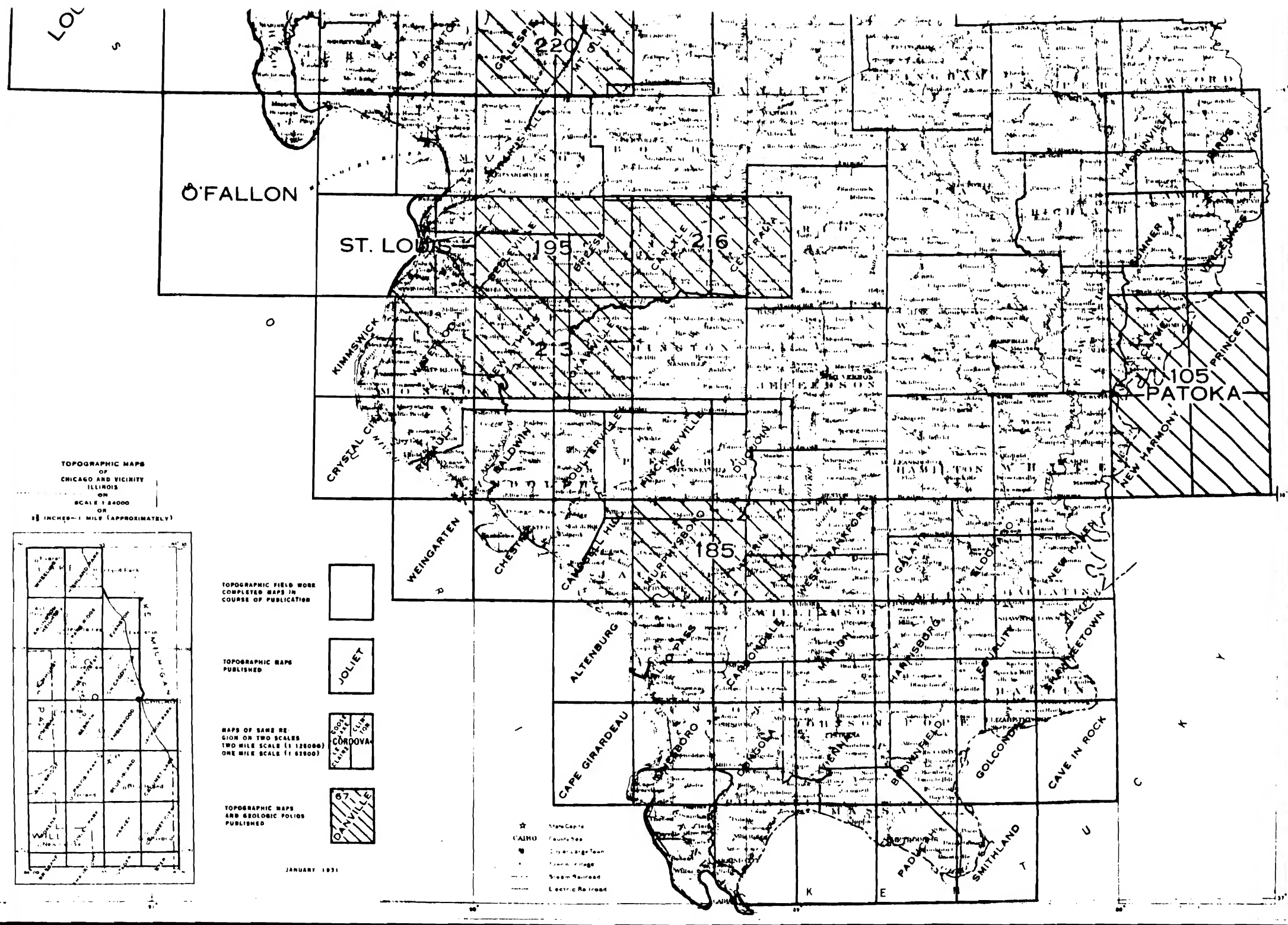
Passenger Train
Steam 10:00 am
Freight Train - all day

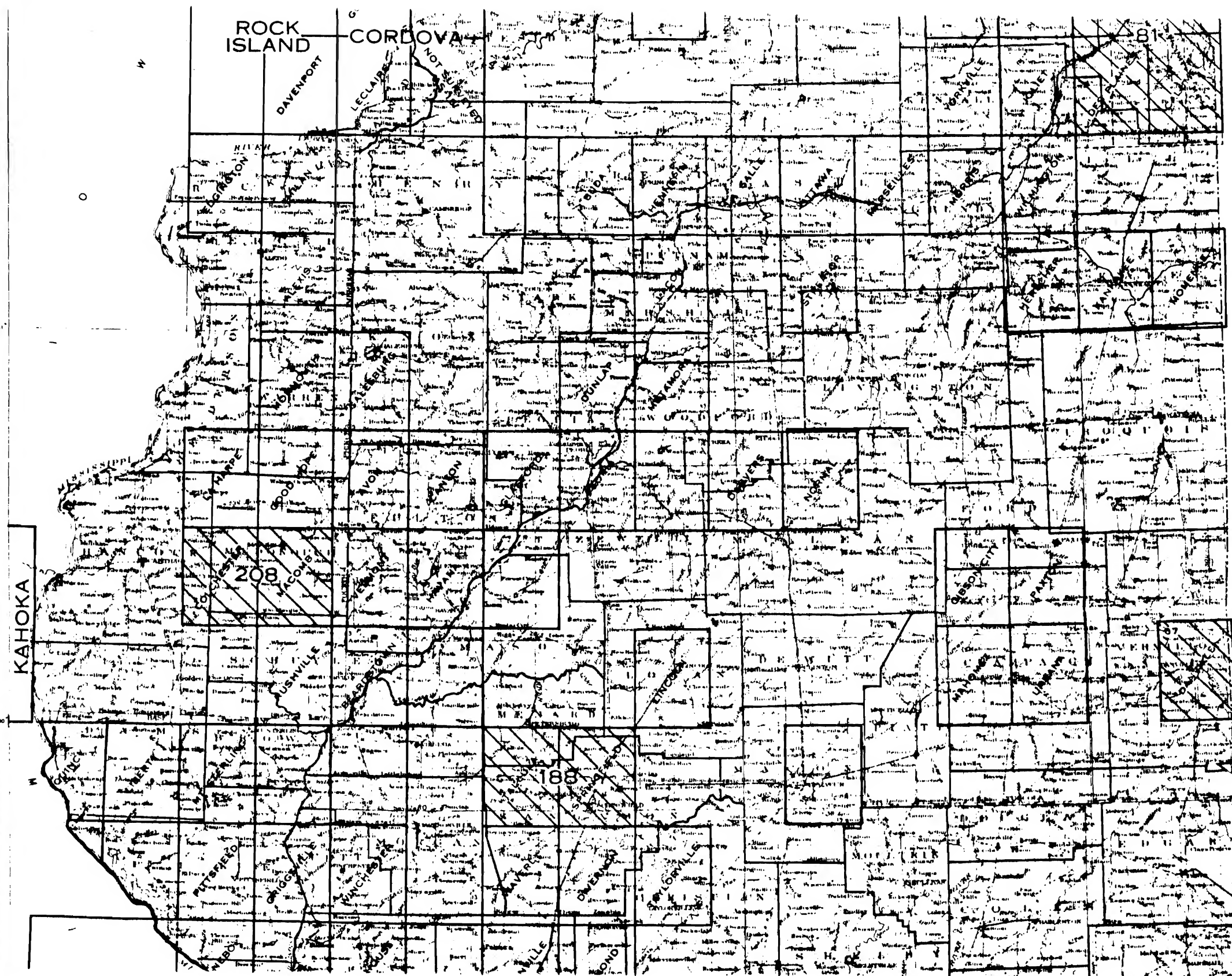
WISCONSIN STREET

← To Cemetery Hill

To St Paul →

Freight Train
Milwaukee Street Car
Milwaukee Street Car





INDEX TO TOPOGRAPHIC MAPS AND GEOLOGIC FOLIOS
ORDER MAPS BY NAMES PRINTED IN RED. NO OTHERS ARE PUBLISHED

[illegible]

MAPS OF THE UNITED STATES

A wall map, 55 by 85 inches, in two sheets, on a scale of 87 miles to 1 inch, approximately, without contours, showing coal fields. Price, \$1; if included in wholesale orders, 60 cents.
A wall map, 49 by 76 inches, in two sheets, on a scale of 40 miles to 1 inch, approximately, either with or without contours. Price, 60 cents; if included in wholesale orders, 36 cents.
A wall map, same size and scale as next above, without contours, showing producing coal districts. Price, 75 cents; if included in wholesale orders, 45 cents.
A wall map, 40 by 63 inches, on a scale of 60 miles to 1 inch, on which is indicated by depth of brown and blue colors the relative height of the land and the depth of the sea. The position of the principal cities and the boundaries of the States are shown. Price, 75 cents; in lots of 10 or more, 50 cents.
A map, 18 by 28 inches, on a scale of 110 miles to 1 inch, either with or without contours. Price, 15 cents; if included in wholesale orders, 9 cents.
A relief or hypsometric map, same size, scale, and price as next above; altitudes indicated by colors.
A base map, 11 by 16 inches, on a scale of 190 miles to 1 inch. Price, 5 cents; if included in wholesale orders, 3 cents.
A base map, 8½ by 13 inches, on a scale of 260 miles to 1 inch. Price, 1 cent; if included in wholesale orders, five for 5 cents.
A map, 28 by 31 inches, on a scale of 110 miles to 1 inch, without contours, showing the physical divisions. Price, 10 cents; if included in wholesale orders, 6 cents.

LOCAL AGENTS FOR TOPOGRAPHIC MAPS

Purchasers may avoid delay incident to ordering through the mails by buying of the following agents, who carry in stock maps of areas in their vicinity and sell them at prices slightly in advance of rates mentioned in this circular:

ILLINOIS

CHICAGO:

Central Scientific Co., 460 East Ohio Street.
Chicago Apparatus Co., 23 South Clinton Street.
Denoyer-Geppert Co., 5235-5237 Ravenswood Avenue.

A. J. Nyström & Co., 3333 Elston Avenue.
Rand, McNally & Co., 586 South Clark Street.
Universal News Co., 74 West Madison Street.
University of Chicago Bookstore, 1803 Ellis Avenue.

W. M. Welch Scientific Co., 1514 Orleans Street.
Fred Wild Co., 814 South Franklin Street.

CHICAGO HEIGHTS:

Weber Costello Co. (E. D. Hubbard).

DANVILLE:

Illinois Printing Co. (M. S. Jones).

EAST ST. LOUIS:

Watson & Son, 510 Missouri Avenue.

EVANSTON:

H. E. Chandler & Co.

MACOMB:

A. A. Schafer.

OTTAWA:

Wheeler & Malo, 709 La Salle Street.

PEORIA:

Jacquin & Co., 231½ Main Street.

NEW YORK

NEW YORK CITY:

Hagstrom Map Co., 20 Vesey Street.
C. S. Hammond, 80 Church Street.

ILLINOIS

DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

Topographic maps.—The United States Geological Survey is making a topographic atlas of the United States. The unit of survey is a quadrangle bounded by parallels of latitude and meridians of longitude, but different quadrangles are mapped on different scales, and consequently the standard maps, though of nearly uniform size (about 16½ by 20 inches), represent areas of different sizes. The standard scales are 1:31,680 (1 inch=one-half mile), 1:62,500 (1 inch=nearly 1 mile), and 1:125,000 (1 inch=nearly 2 miles). Some maps are published on special scales. Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. The maps are printed in three colors. The cultural features, such as roads, railroads, cities, and towns, as well as the lettering, are in black; the water features are in blue; and the features of relief—hills, mountains, etc.—are shown by brown contour lines. The contour interval differs according to the scale of the map and the relief of the country. On some maps woodland areas are shown in green and special features in other colors.

The progress of this work in Illinois is shown on the index map within. The surveys since 1905 have been made in cooperation with the State Geological Survey. Each of the rectangles outlined in red indicates a quadrangle of which a topographic survey has been made. The name of the resulting topographic map, if published, is also shown, and its scale is indicated by the size of the rectangle. Each of the maps represented by the smallest rectangles shows a quadrangle measuring 7½' each way, or about 55 square miles. The scale is 1:24,000, and the contour interval is 5 feet. Each of the maps represented by the rectangles intermediate in size shows a quadrangle measuring 15' each way, or from 221 to 238 square miles, the area differing according to the latitude. The scale is 1:62,500, and the contour interval is either 10 or 20 feet, except on one map (Chicago), where it is only 5 feet. Each of the maps represented by the larger rectangles shows a quadrangle measuring 30' each way or from 885 to 938 square miles. The scale is 1:125,000, and the contour interval is either 20 or 50 feet. The whole number of published topographic maps covering quadrangles in Illinois is 164. A list of general and special maps and sheets, is given on page 3.

The price of the standard maps is 10 cents each, but a discount of 40 per cent is allowed on an order amounting to \$5 at the retail price—that is, the wholesale rate for standard topographic maps is \$3 for 50. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. (See below.) Prices for maps other than the standard are given on page 3 of this circular. No discount will be allowed on an order amounting to less than \$3. Prepayment is required and may be made by money order, payable to the Director of the United States Geological Survey or in cash—the exact amount—at sender's risk; postage stamps should not be sent.

If maps ordered are not in stock the right is reserved to substitute others rather than return very small sums of money by mail, unless directions to the contrary are given in the order. Name of county should be included in post-office address.

The Survey can not supply mounted maps.

Geologic folios.—Geologic maps of the areas shown on the topographic maps are being published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. The folios are of special interest to students of geography and geology and are valuable as guides in the development and utilization of mineral resources.

For Illinois 12 folios have been issued, as shown on the index map by the rectangles shaded red and numbered. Folios 67, 81, 105, and 145 are out of print. The price of Folios 185 and 188 is 25 cents a copy for the library edition and 50 cents for the octavo edition, with a reduction of 40 per cent if included in wholesale orders. Folios 195, 200, 208, 213, 216, and 220 are published only in the library edition, which sells for 25 cents a copy retail, or 15 cents wholesale. A general circular on geologic folios may be had on application.

World Atlas of Commercial Geology.—The World Atlas of Commercial Geology has been compiled by the United States Geological Survey to help in directing both the industry and the commerce of the United States. Two parts have been published. Part I, Distribution of mineral production, gives the results of a study of the world's supply of essential minerals. Part I is out of print. Part II, Water power of the world, shows the world's potential water power and the extent to which it has been utilized at home and abroad. Price \$1; in lots of 10 or more, 60 cents.

All correspondence should be addressed to—

THE DIRECTOR,
UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C.

January, 1931.
6-5,000.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

The following reports relate to Illinois but are not parts of the topographic or geologic atlas. An asterisk (*) indicates that the report is out of print, but many such reports are available for consultation in certain libraries. (See list on p. 3.) The publications for which the price is stated are sold by the Superintendent of Documents, Government Printing Office, Washington, D. C. Remittances to that official should be made by postal money order, express order, or check; postage stamps will not be accepted.

Seventeenth, 1895-96. *Part II contains: Water resources of Illinois, by Frank Leverett, pp. 695-849.
Eighteenth, 1896-97. Part I contains: Triangulation and spirit leveling, by H. M. Wilson and others,
pp. 181-422. \$1.
Nineteenth, 1897-98. Part I contains: Triangulation and spirit leveling, by H. M. Wilson and others,
pp. 145-408. \$1.
Twentieth, 1898-99. Part I contains: Triangulation and spirit leveling, by H. M. Wilson and others,
pp. 211-530. \$1.
Twenty-second, 1900-1901. *Part III contains: The eastern interior coal field, by G. H. Ashley, pp.
267-805.

88. The Illinois glacial lobe, by Frank Leverett. 1909. 817 pp. \$1.60.

*11. The clays of the United States east of Mississippi River, by Heinrich Ries. 1908. 296 pp.
100-A. The coal fields of the United States: General introduction, by M. R. Campbell, pp. 1-38. 40c.
*185. The composition of the river and lake waters of the United States, by F. W. Clarke. 1924.
199 pp.

*58. Glacial boundary in western Pennsylvania, Ohio, Kentucky, Indiana, and Illinois, by G. F. Wright. 1890. 112 pp.

*201. Results of primary triangulation and primary traverse, 1901-2, by H. M. Wilson and others. 164 pp.

*218. Contributions to economic geology, 1902. Contains: Recent work in the coal field of Indiana and Illinois, by M. L. Follmer and G. H. Ashley, pp. 281-293; Stone industry in the vicinity of Chicago, Ill., by W. C. Alden, pp. 357-360.

*222. Results of primary triangulation and primary traverse, 1902-3, by S. R. Gannett. 206.

WATER-SUPPLY PAPERS—Continued.

289. The quality of the surface waters of Illinois, by W. D. Collins. 1910. 94 pp. 10c.
384. The Ohio Valley flood of March-April, 1918, by A. H. Horton and H. J. Jackson. 94 pp. 30c.
384. Stream-gaging stations and publications relating to water resources, 1888-1918, by H. D. Wood. 95 pp.
364. Water analyses from the laboratory of the United States Geological Survey, by F. W. Clarke. 1914. 40 pp. 5c.
- *497. Bibliography and index of the publications of the United States Geological Survey relating to ground water, by O. E. Meinzer. 1919. 169 pp.
568. Preliminary index to river surveys made by the United States Geological Survey and other agencies, by B. E. Jones and R. O. Holland. 1926. 108 pp. 35c.

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BELLEVILLE:	FREEPORT:	PEORIA:
Public.	Public.	Public.
BLOOMINGTON:	GALESBURG:	ROCKFORD:
Illinois Wesleyan University	Free Public.	Public.
		Public.

Purchasers may avoid delay incident to ordering through the mails by buying of the following agents, who carry in stock maps of areas in their vicinity and sell them at prices slightly in advance of rates mentioned in this circular:

A will map, 65 by 75 inches, in two sheets, on a scale of 87 miles to 1 inch, approximately, without contour, showing coal fields. Price, \$1; if included in wholesale orders, 50 cents.

A will map, 45 by 75 inches, in two sheets, on a scale of 40 miles to 1 inch, approximately, either with or without contour. Price, 50 cents; if included in wholesale orders, 50 cents.

A will map, same size and scale as next above, without contour, showing producing coal districts. Price, 75 cents; if included in wholesale orders, 45 cents.

A will map, 40 by 85 inches, on a scale of 60 miles to 1 inch, on which is indicated by depth of brown and blue colors the relative height of the land and the depth of the sea. The position of the principal cities and the boundaries of the States are shown. Price, 75 cents, in lots of 10 or more, 60 cents.

A map, 17 by 25 inches on a scale of 110 miles to 1 inch, either with or without contour. Price, 15 cents; if included in wholesale orders, 5 cents.

A ruled or hypsometric map, same size, scale, and price as next above; altitudes indicated by colors. Price, 15 cents; if included in wholesale orders, 8 cents.

A map, 17 by 15 inches, on a scale of 120 miles to 1 inch. Price, 5 cents; if included in wholesale orders, 3 cents.

A map, 17 by 15 inches, on a scale of 200 miles to 1 inch. Price, 1 cent; if included in wholesale orders, 1/2 cent.

A map, 28 by 31 inches, on a scale of 110 miles to 1 inch, without contour, showing the physical divisions. Price, 10 cents; if included in wholesale orders, 5 cents.

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Central Scientific Co., 460 East Ohio Street.
Lanoker-Apparatus Co., 858½ South Clinton Street.
Union-Apparatus Co., 858½-8597 Bavenwood Avenue.
A. J. Nyström & Co., 2288 Blifton Avenue.
Rand, McNally & Co., 686 South Clark Street.
Universal News Co., 74 West Madison Street.
W. M. Walsh Scientific Co., 1516 Orleans Street.
University of Chicago Bookstore, 1608 Ellis Avenue.
F. W. Wilson Scientific Co., 818 South Franklin Street.
Webster Higgins & Co. (R. D. Hubbard),
Chicago Webster Co., 222½ Main Street.

DANVILLE
Illinois Printing Co. (M. S. Jones).
East Br. Louis.
Watson & Son, 510 Mansour Avenue.
REYNOLDS
H. R. Chandler & Co.
MACOMBS
A. A. Bohrer.
OTTAWA
Webster & Malo, 709 La Salle Street.
PONTIAC
Jacquin & Co., 222½ Main Street.

- Bain, pp. 292-297; Fluorspar deposits of southern Illinois, by H. F. Bain, pp. 505-511.
- *245. Results of primary triangulation and primary traverse, 1903-4, by S. S. Gannett. 328 pp.
246. Zinc and lead deposits of northwestern Illinois, by H. F. Bain. 1905. 66 pp. 15c.
255. The fluorspar deposits of southern Illinois, by H. F. Bain. 1905. 75 pp. 15c.
276. Results of primary triangulation and primary traverse, 1904-5, by S. S. Gannett. 268 pp. 20c.
294. Zinc and lead deposits of the upper Mississippi Valley, by H. F. Bain. 1906. 155 pp. 75c.
- *302. Areas of the United States, the States, and the Territories, by Henry Gannett. 1906. 9 pp.
- *310. Results of primary triangulation and primary traverse, 1905-6, by S. S. Gannett. 248 pp.
- *316. Contributions to economic geology, 1906, Part II. Contains: Coal investigations in the Saline-Gallatin field, Ill., and adjoining area, by F. W. De Wolf, pp. 116-188.
- *340. Contributions to economic geology, 1907, Part I. Contains: Concrete materials produced in the Chicago district, by E. F. Burchard, pp. 388-410.
421. Results of spirit leveling in Illinois, 1896-1906, by S. S. Gannett and D. H. Baldwin. 74 pp. 10c.
- *433. Geology and mineral resources of the St. Louis quadrangle, Mo.-Ill., by N. M. Fenneman. 1911. 78 pp.
440. Results of triangulation and primary traverse, 1906, 1907, and 1908. 698 pp. 50c.
- *470. Contributions to economic geology, 1910, Part I. Contains: Clay resources of the Murphysboro quadrangle, Ill., by E. W. Shaw, pp. 297-301.
498. Results of spirit leveling in Illinois, 1909 and 1910. 115 pp. 10c.
496. Results of triangulation and primary traverse for the years 1909 and 1910. 392 pp. 30c.
506. Geology and mineral resources of the Peoria quadrangle, Ill., by J. A. Udden. 1912. 108 pp. 25c.
- *522. Portland cement materials and industry in the United States, by E. C. Eckel and others. 1913. 401 pp.
- *531. Contributions to economic geology, 1911, Part II. Contains: Miscellaneous analyses of coal samples from various fields of the United States, pp. 381-385.
- *541. Contributions to economic geology, 1912, Part II. Contains: Analyses of coal samples from various fields of the United States, by M. R. Campbell. pp. 491-526.
551. Results of triangulation and primary traverse, 1911 and 1912. 396 pp. 30c.
553. Results of spirit leveling in Illinois, 1911-1913. 110 pp. 10c.
- *599. Our mineral reserves—how to make America industrially independent, by G. O. Smith. 1914. 48 pp.
- *624. Useful minerals of the United States (revised), by F. C. Schrader and others. 1916. 412 pp.
- 644-E. Primary traverse in Illinois, Wisconsin, Minnesota, North Dakota, and South Dakota, 1913-1915, pp. 225-296. 5c.
659. Cannel coal in the United States, by G. H. Ashley. 1918. 127 pp. 15c.
673. Spirit leveling in Illinois, 1914-1917. 108 pp. 10c.
- *708. High-grade clays of the eastern United States, by H. Ries and others. 1922. 314 pp.
- 709-E. Primary traverse in Illinois and Wisconsin, 1916-1918. pp. 167-196. 5c.
817. Boundaries, areas, geographic centers, and altitudes of the United States and the several States, by E. M. Douglas. 1920. 286 pp. 50c.
- WATER-SUPPLY PAPERS:**
- *44. Profiles of rivers in the United States, by Henry Gannett. 1901. 100 pp.
118. The disposal of strawboard and oil-well wastes, by R. L. Sackett and Isalah Bowman. 1905. 52 pp. 5c.
- *114. Underground waters of eastern United States. Contains: Illinois, by Frank Leverett, pp. 248-257.
149. Preliminary list of deep borings in the United States, by N. H. Darton. 1906. 175 pp. 10c.
164. Underground waters of Tennessee and Kentucky west of Tennessee River and of an adjacent area in Illinois, by L. C. Glenn. 1906. 178 pp. 35c.
- *194. Pollution of Illinois and Mississippi Rivers by Chicago sewage, compiled by M. O. Leighton. 1907. 369 pp.

CHICAGO:
Field Museum.
John Crerar.
Newberry.
Public.
St. Ignatius High School.
University of Chicago.
Western Society of Engineers.

DANVILLE:
Public.

EVANSTON:
Northwestern University.

Public.
JOLIET:
Public.
LISTE:
St. Procopius College.
McKANSBORO:
Mary E. C. McCoy Memorial.
MONMOUTH:
Monmouth College.
NORMAL:
Illinois State Normal University.

Augustana College.
SPRINGFIELD:
Illinois State.
Illinois State Mining Board.
Illinois State Museum.
URBANA:
Illinois State Laboratory of
Natural History.
University of Illinois.

SPECIAL MAPS AND SHEETS

(Measurements are approximate)

- Camp Grant, Ill.** This map, which is double the standard size, shows portions of the Rockford, Belvidere, Kings, and Kirkland quadrangles, including Camp Grant and the adjacent region. On the back is printed a popular description of the origin of the natural features of the area. The map covers an area of one-eighth of a square degree, or about 448 square miles. Limiting parallels, 42° 06' and 42° 30'. Limiting meridians, 88° 45' and 89° 15'. Size, 30 by 38 inches. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval, 20 feet. Price, 10 cents; if included in wholesale orders, 5 cents.
- Chicago and vicinity.** The special maps on the scale of 1:24,000, with a contour interval of 5 feet, shown on the inset map at the lower left corner of the index map, measure 22 by 26 inches but are sold at the same price as the standard maps—10 cents each, or, if included in wholesale orders, 5 cents.
- St. Louis, Mo.-Ill.** This map, which is double the standard size, is counted as two sheets in the whole number of published topographic maps covering quadrangles in Illinois. (See p. 1.) It covers an area of one-eighth of a square degree, or about 467 square miles. Limiting parallels, 38° 30' and 38° 45'. Limiting meridians, 90° and 90° 30'. Size, 20 by 38 inches. Scale, 1:62,500, or about 1 mile to 1 inch. Contour interval, 20 feet. Price, 20 cents; if included in wholesale orders, 12 cents.
- Illinois (State).** This map is in black and white and does not show contours. Size, 31 by 59 inches. Scale, 1:500,000, or about 8 miles to 1 inch. Price, 25 cents; if included in wholesale orders, 15 cents. Also published on a scale of 1:1,000,000, or about 16 miles to 1 inch; size, 17 by 25 inches; price, 5 cents; if included in wholesale orders, 3 cents.
- Illinois (oil and gas fields).** Map printed on the United States Geological Survey's base map of Illinois, showing by distinctive colors and symbols the productive oil and gas fields, the main oil pipe lines, and the oil refineries in the State, as well as the positions of many arches, domes, and other structural features. Size, 31 by 53 inches. Scale, 1:500,000, or about 8 miles to 1 inch. Price, 50 cents; if included in wholesale orders, 30 cents.
- Mississippi River Valley below Dubuque, Iowa.** This map represents an area of about 278,000 square miles and includes the drainage basin of Mississippi River from the Gulf of Mexico as far north as Dubuque, Iowa, as far east as Evansville, Ind., and as far west as Eureka, Kans. Limiting meridians, 87° 30' and 96° 30'. Limiting parallels, 29° and 42° 30'. Size, 28 by 63 inches. Scale, 1:1,000,000, or about 16 miles to 1 inch. Price, 50 cents; if included in wholesale orders, 30 cents.
- Coal fields and producing districts.** A set of eight maps, on a scale of 1:1,000,000, or about 16 miles to 1 inch, showing the principal coal-producing districts and the areas underlain by coal-bearing rocks in the following States: West Virginia and part of Maryland, Kentucky, Tennessee, Virginia, Alabama and part of Georgia, Ohio, Indiana, and Illinois. Price of each map, 10 cents; price of the set, 50 cents, which should not be included in wholesale orders.
- North America.** This map does not show contours. Size, 29 by 38 inches. Scale, 1:10,000,000, or about 158 miles to 1 inch. Price, 40 cents; if included in wholesale orders, 24 cents.
- Sheet of standard symbols.** Shows symbols and abbreviations adopted by the Board of Surveys and Maps of the United States Government for use on Government maps; printed in five colors. Size, 18 by 30 inches. Price, 40 cents; if included in wholesale orders, 24 cents.